LightShip™ Reference Guide

Version 3.0

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* * *

About this Manual

This reference guide describes every menu, command, and dialog box in LightShip™. It complements the *LightShip User's Guide*, which explains how to create LightShip applications.

The *LightShip Reference Guide* includes these chapters:

Chapter 1: The Menu Bar describes the LightShip commands and dialog boxes that appear on the menu bar at the Author, Browse, and Capture levels.

The following chapters describe the menus that appear from the Tool menu commands:

Chapter 2: Chart Menu
Chapter 3: Document Menu
Chapter 4: Draw Menu
Chapter 5: Format Menu
Chapter 6: Hotspot Menu
Chapter 7: Image Menu
Chapter 8: Menu Object Menu
Chapter 9: Text Menu

Chapter 10: Actions describes the actions and options in the Action dialog box.

Chapter 11: Functions describes the functions and options in the Function Action dialog box.

This reference guide assumes that you are familiar with:

- Your computer, mouse, and Microsoft® Windows™;
- Starting LightShip and using menu commands, shortcut keys, and dialog boxes.

Conventions Used in this Manual

To find a menu, command, or dialog box option easily, Chapters 1 through 9 follow these conventions:

Menu Commands This heading is a menu command.

Cascading Menu Commands This heading is a cascading menu command.

Dialog Box Options

This heading is a dialog box option.

⁂

Chapter 1

The Menu Bar

The Menu Bar

You can use LightShip at three levels:

- Author, for developing LightShip applications
- Browse, for running LightShip applications, and
- Capture, for running LightShip applications without access to Windows

Figure 1-1 displays the Author level menu bar.

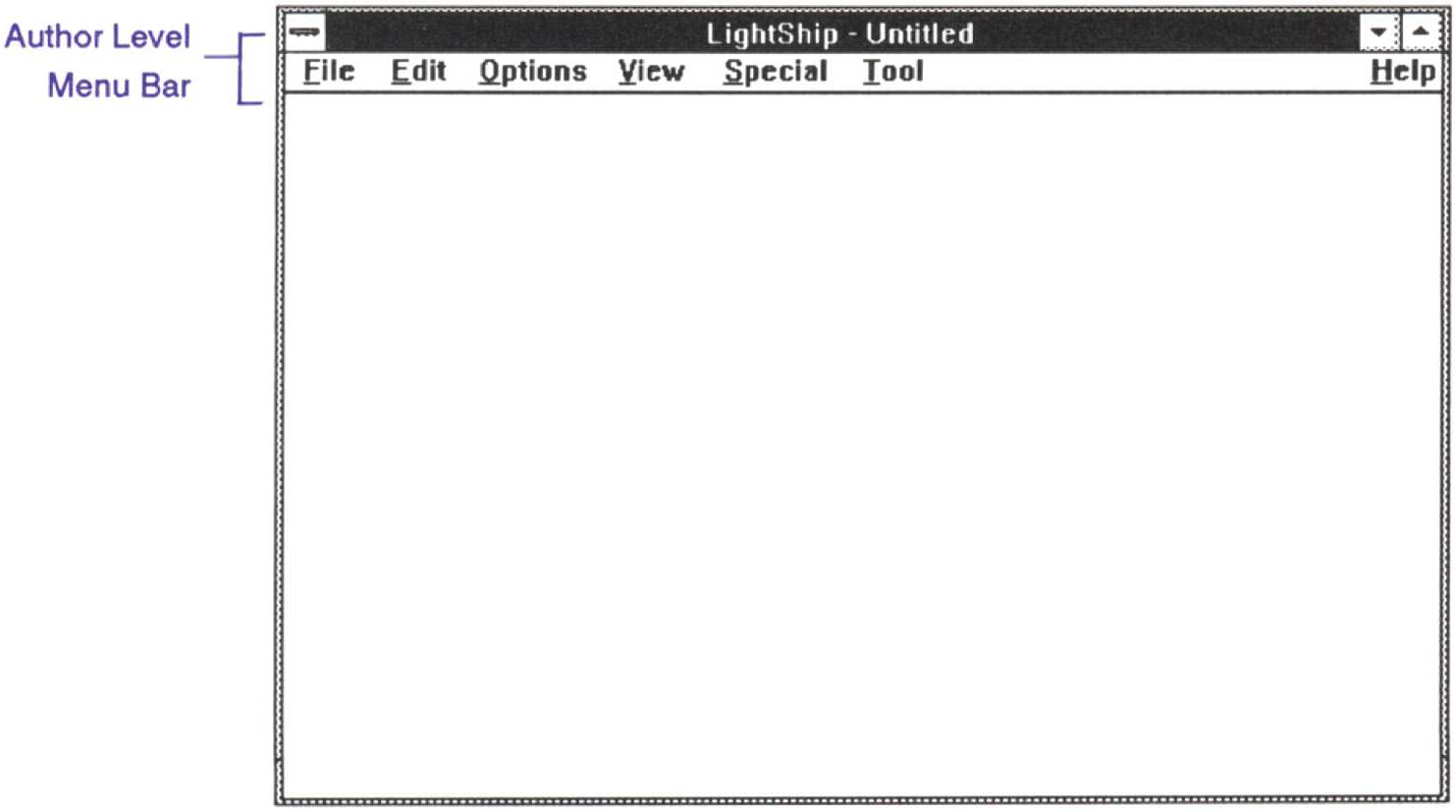
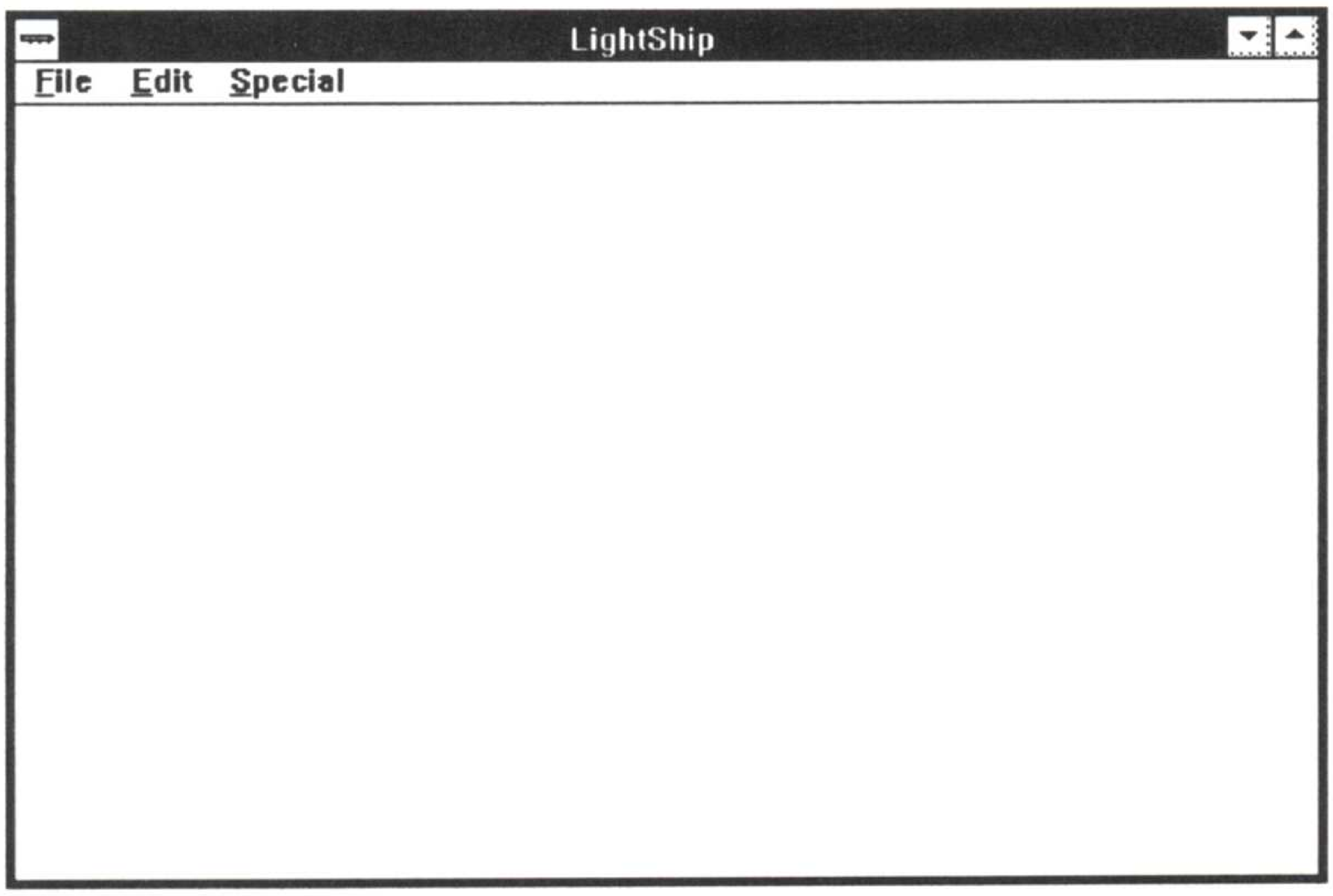


Figure 1-1 Author Level Menu Bar

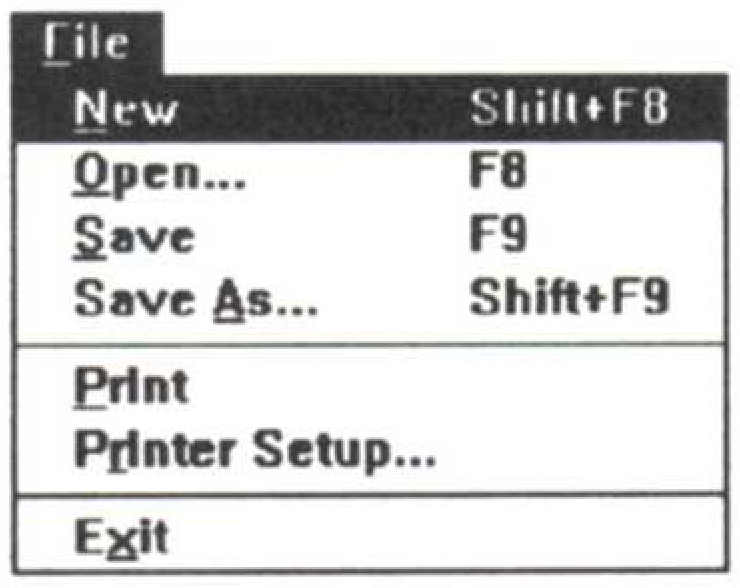
The menu bar at the Browse and Capture levels, shown in Figure 1-2, uses a shorter form of the Author level menu bar. The Browse and Capture level menu bar provides commands for viewing and opening screens, but not for altering their display or functionality.

You can remove the menu bar completely (using Options Hide Menu Bar) or add customized menus for the menu bar (using the Tool Menu command).



Browse and Capture Level Menu Bar

Figure 1-2 Default Browse and Capture Level Menu Bar



File Menu

Use the File menu to create, open, save, and print LightShip screens, and to exit from LightShip.

New (SHIFT+F8)

The New command creates a new LightShip screen. A new screen has a caption of LightShip - Untitled until you save it to a filename.

If you have a DEFAULT.LSF screen defined in the current directory or a directory that is in the search path, File New creates a screen using the default commands and objects specified in DEFAULT.LSF. The directory in which DEFAULT.LSF exists becomes the current working directory.

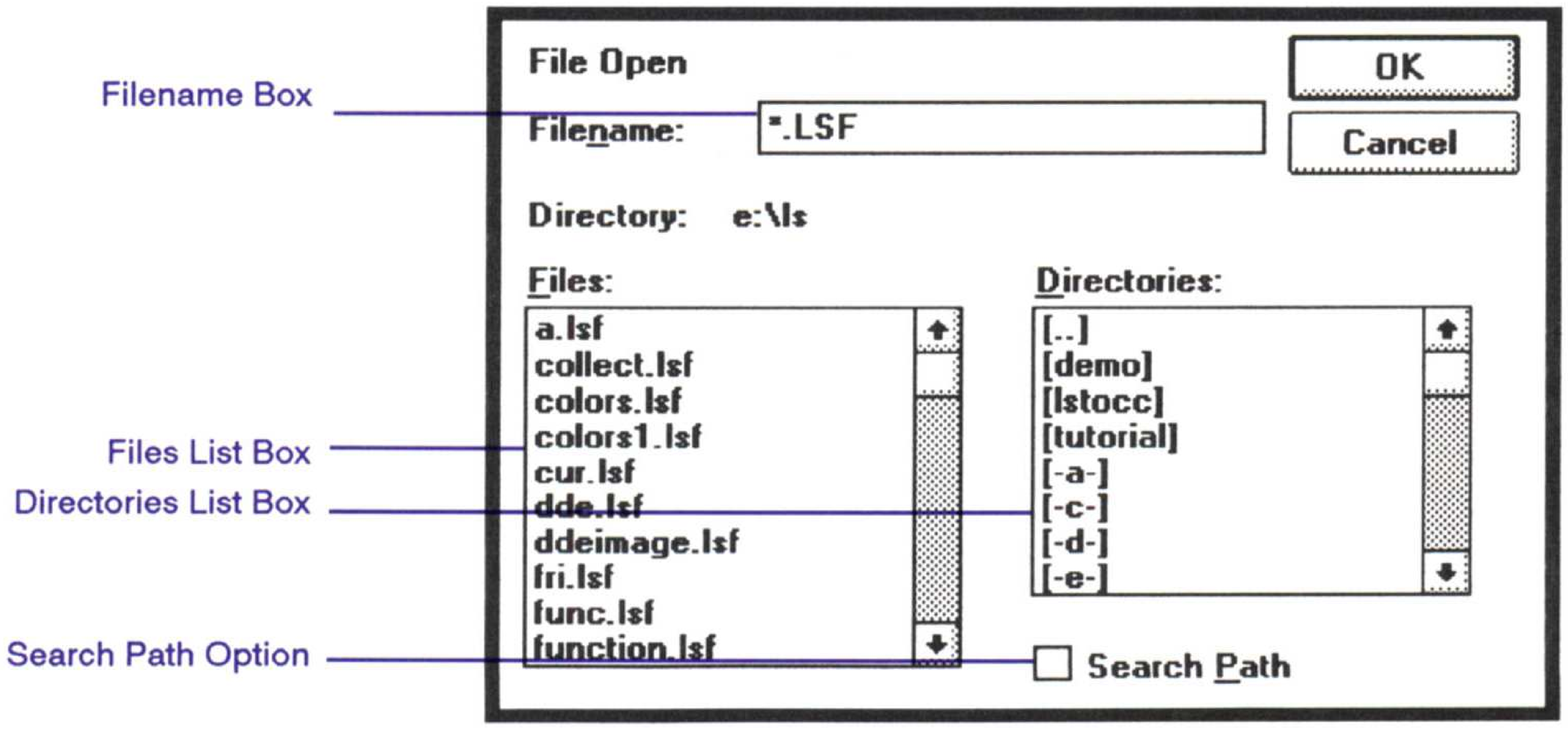
For more information about using the DEFAULT.LSF screen or using defaults that are known only to the current screen, refer to the *LightShip User's Guide*.

Open... (F8)

The Open command opens an existing LightShip screen. Use the File Open dialog box to select the file from the current directory or from a different drive, directory, or subdirectory.

You can open only one screen at a time for each instance of the program. When you open a screen, the previous one closes. If you attempt to open another screen without saving the changes to the one that is already open, LightShip prompts you to "Save modifications to the current screen?"

File Open also appears at the Browse and Capture levels if Options Hide Menu Bar is off. File Open performs the same way at any level. Screens open at the same level from which you open them.



Filename: *.LSF

Directory: e:\ls

a.lsf
collect.lsf
colors.lsf
colors1.lsf
cur.lsf
dde.lsf
ddeimage.lsf
fri.lsf
func.lsf
function.lsf

[..]
[demo]
[lstocc]
[tutorial]
[-a-]
[-c-]
[-d-]
[-e-]

Figure 1-3 File Open Dialog Box

Filename

The Filename box affects the files that are shown in the Files list box. If you enter a complete filename and extension, LightShip opens that file. Otherwise, LightShip lists the files in the Files list box that are specified by the directory and wildcard information. For example, **`CH*`** lists all the .LSF files in the current directory that begin with the letters CH.

Although LightShip files can have any extension, the default .LSF extension is recommended.

Files

The Files box lists the LightShip files in the current directory based on the filename and wildcard specification in the Filename box. You can choose any file in this list to open.

Directories

The Directories box lists the current drive's parent directory ([..]), subdirectories, and all available drives. You can select a different drive or directory and list its files in the Files list box.

Search Path

The Search Path option searches for the file in directories that are included in paths, instead of just the current directory.

LightShip searches in this order:

1. The current working directory
2. The path defined by the local LightShip variable _&PATH
3. The path defined by the global LightShip variable &&PATH
4. The path defined by the LightShip environment variable
5. The path defined by the DOS PATH command

When you turn off Search Path, LightShip searches only the directory specified in the dialog box. For more information about using search paths, refer to the *LightShip User's Guide*.

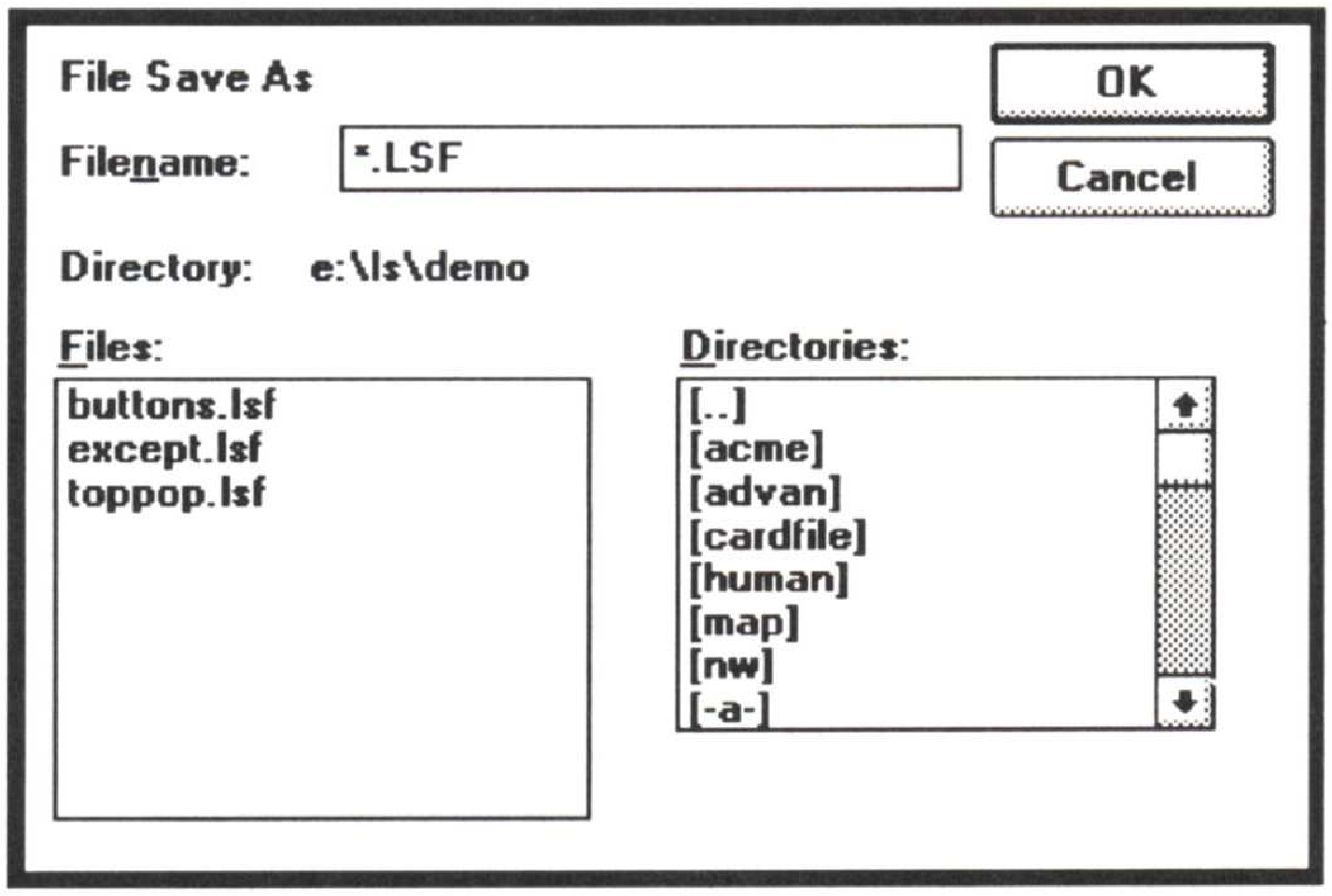
Save (F9)

The Save command saves the screen to a file with the same name.

The first time you save the file, the File Save As dialog box opens and prompts you for a filename. All subsequent saves take place without the dialog box appearing.

Save As... (SHIFT+F9)

The Save As command saves the screen to a different filename than the one specified in the File Open command. Use the File Save As dialog box to specify the filename. (LightShip automatically opens the File Save As dialog box if you attempt to save a new screen before naming it.)



Filename: *.LSF

Directory: e:\ls\demo

Files:
buttons.lsf
except.lsf
toppop.lsf

Directories:
[..]
[acme]
[advan]
[cardfile]
[human]
[map]
[nw]
[-a-]

Figure 1-4 File Save As Dialog Box

If you type a filename without an extension, LightShip provides a .LSF extension. For more information about the options in this dialog box, refer to the File Open command.

If you attempt to save the current screen to an existing filename, LightShip prompts you to "Overwrite the existing file?" Choose OK to overwrite the file or Cancel to cancel the Save As command.

Print

The Print command sends the current screen display to the default printer set up for Windows. LightShip uses the print settings from the Control Panel unless you change the settings using the Printer Setup command.

File Print also appears at the Browse and Capture levels if Options Hide Menu Bar is off. Print performs the same way at all levels.

Printer Setup...

The Printer Setup command changes the default printer and printer settings. Use the Printer dialog box to change the printer and settings that get carried out when you choose the Print command.

File Printer Setup also appears at the Browse and Capture levels if Options Hide Menu Bar is off. Printer Setup performs the same way at all levels.

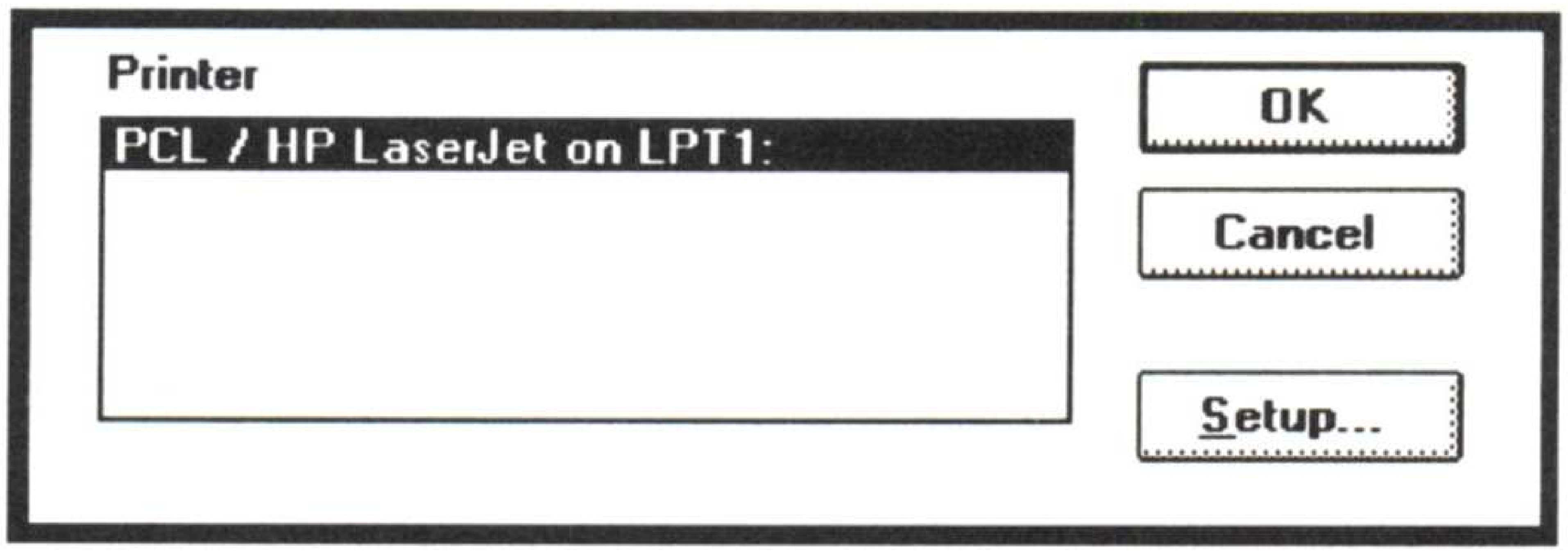


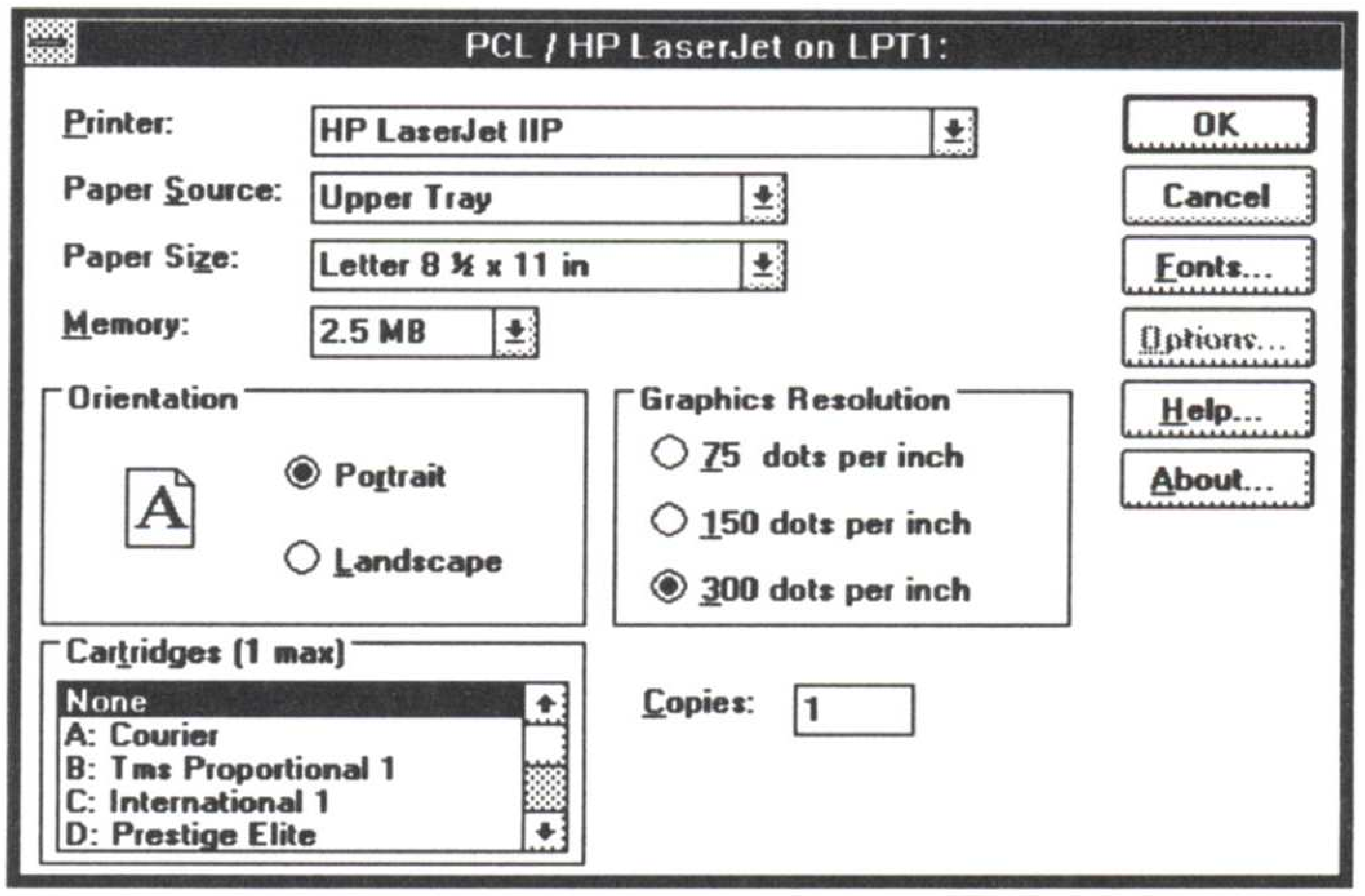
Figure 1-5 Printer Dialog Box

Printer

The Printer box highlights the current default printer and lists all other available printers; the default printer is selected. Select any printer as the new default printer.

Setup...

The Setup button opens a dialog box for changing the printer settings. For more information on the settings for your printer, refer to the printer's installation guide.



Printer: HP LaserJet IIP

Paper Source: Upper Tray

Paper Size: Letter 8 ½ x 11 in

Memory: 2.5 MB

Orientation: ● Portrait ○ Landscape

Graphics Resolution: ○ 75 dots per inch ○ 150 dots per inch ● 300 dots per inch

Cartridges (1 max):
- None
- A: Courier
- B: Tms Proportional 1
- C: International 1
- D: Prestige Elite

Copies: 1

Figure 1-6 Sample of a Printer Setup Dialog Box

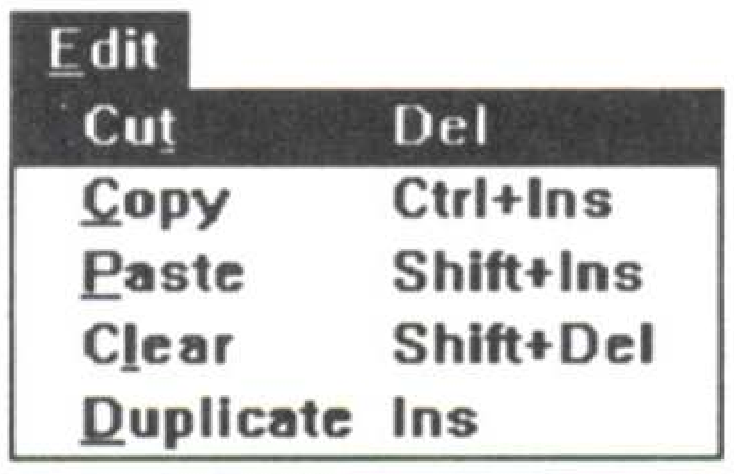
Windows saves these printer settings until you change them again using LightShip, the Control Panel, or another application.

Exit

The Exit command closes the LightShip program. If you attempt to exit without saving your screen changes, LightShip prompts you to "Save modifications to the current screen?" Choose Yes to save your changes and exit, No to discard your changes and exit, or Cancel to remain in the screen without saving or exiting.

File Exit also appears at the Browse and Capture levels if Options Hide Menu Bar is off. At the Author and Browse levels, this command exits you to Windows. At the Capture level, this command returns you to DOS.

Edit Menu



Use the Edit menu to cut, copy, paste, clear, and duplicate objects. The Edit menu commands affect the currently selected item(s), whether it is one object, multiple objects, or grouped objects.

For information about grouped objects, refer to the Special Group command. For information on selecting multiple objects, refer to the *LightShip User's Guide*.

Cut (DEL)

The Cut command removes the selected object(s) from the screen and places them on the Clipboard. The last selected object(s) remain on the Clipboard until you cut or copy again or exit from Windows.

Objects can be cut and copied in these formats:

- LSF file
- CF_BITMAP, with CF_PALETTE
- CF_DIB

Copy (CTRL+INS)

The Copy command copies the selected object(s) to the Clipboard, while leaving the original object(s) on the screen. The copied object(s) remain on the Clipboard until you copy or cut something else or exit from Windows.

Edit Copy also appears at the Browse and Capture levels if Options Hide Menu Bar is off. Edit Copy performs the same way at all levels.

Paste (SHIFT+INS)

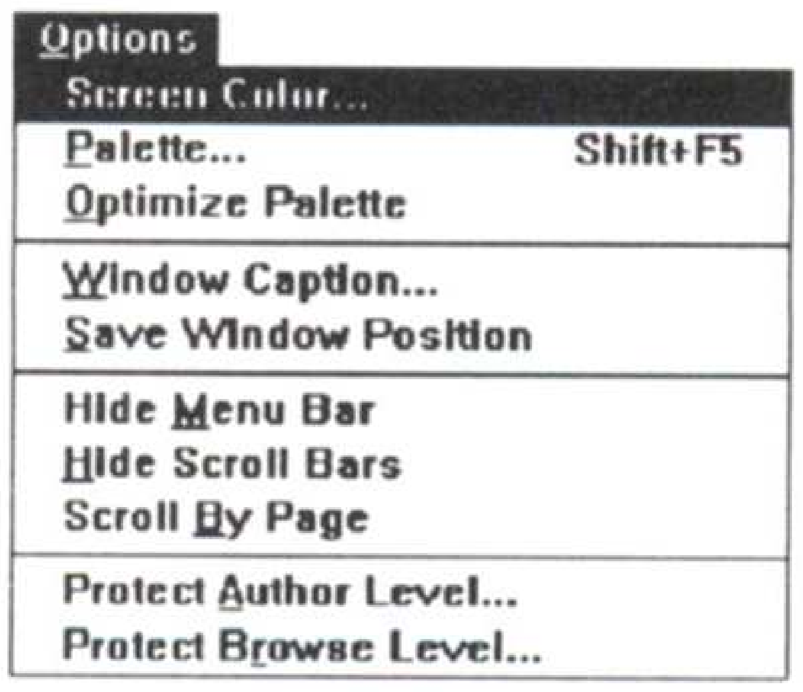
The Paste command pastes the contents of the Clipboard onto the screen at the point where you last clicked. The Clipboard contains the last object(s) that you cut or copied in this session. If the Clipboard is empty, Paste is unavailable.

Clear (SHIFT+DEL)

The Clear command permanently erases selected objects from the screen. Since cleared objects do not go onto the Clipboard, you cannot paste them back.

Duplicate (INS)

The Duplicate command copies the selected object(s) to the screen. The duplicated object(s) appear a little lower and to the right of the original object.



Options Menu

Use the Options menu to change the attributes of a screen and to save these changes with the screen.

Screen Color...

The Screen Color command changes the screen's background color. Use the Screen Color dialog box to change the color.

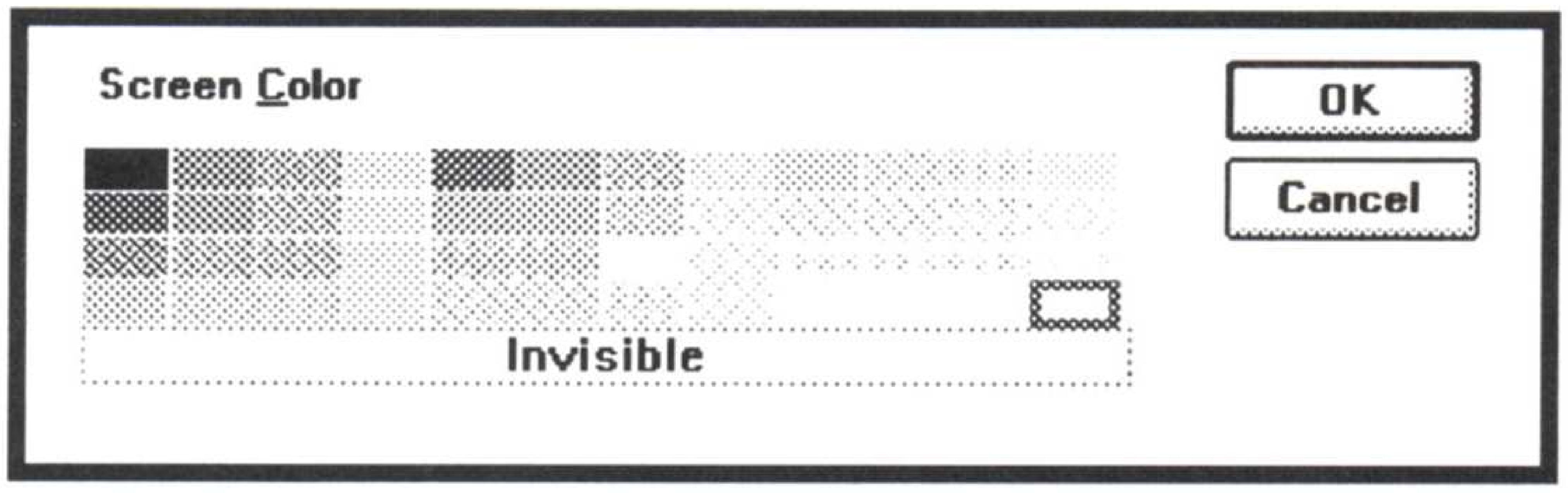


Figure 1-7 Screen Color Dialog Box

Screen Color

The Screen Color boxes display the range of available colors. Select one to change the current screen background color.

Invisible

The Invisible box makes the screen's background color transparent. The last screen that you closed in this session will show through as a dimmed background of this screen, even though the objects on the previous screen are unavailable.

During an Open File hotspot or menu action, use the Invisible option in a called screen to make it appear as a pop-up screen on top of the calling screen. For more information about the Open File action, refer to *Chapter 10: Actions*.

Palette...
(SHIFT+F5)

The Palette command changes the palette of available colors for this screen. Changing a color affects all the Color dialog boxes.

LightShip displays as many colors as a display adapter supports:

- In 256-color mode, LightShip displays 256 solid colors if Options Optimize Palette is on; otherwise, it displays 48 solid colors.
- In 16-color mode, LightShip displays 16 solid colors.

Use the Palette dialog box to change a color. Any object in the screen that currently uses this color entry in the palette will automatically apply the new color.

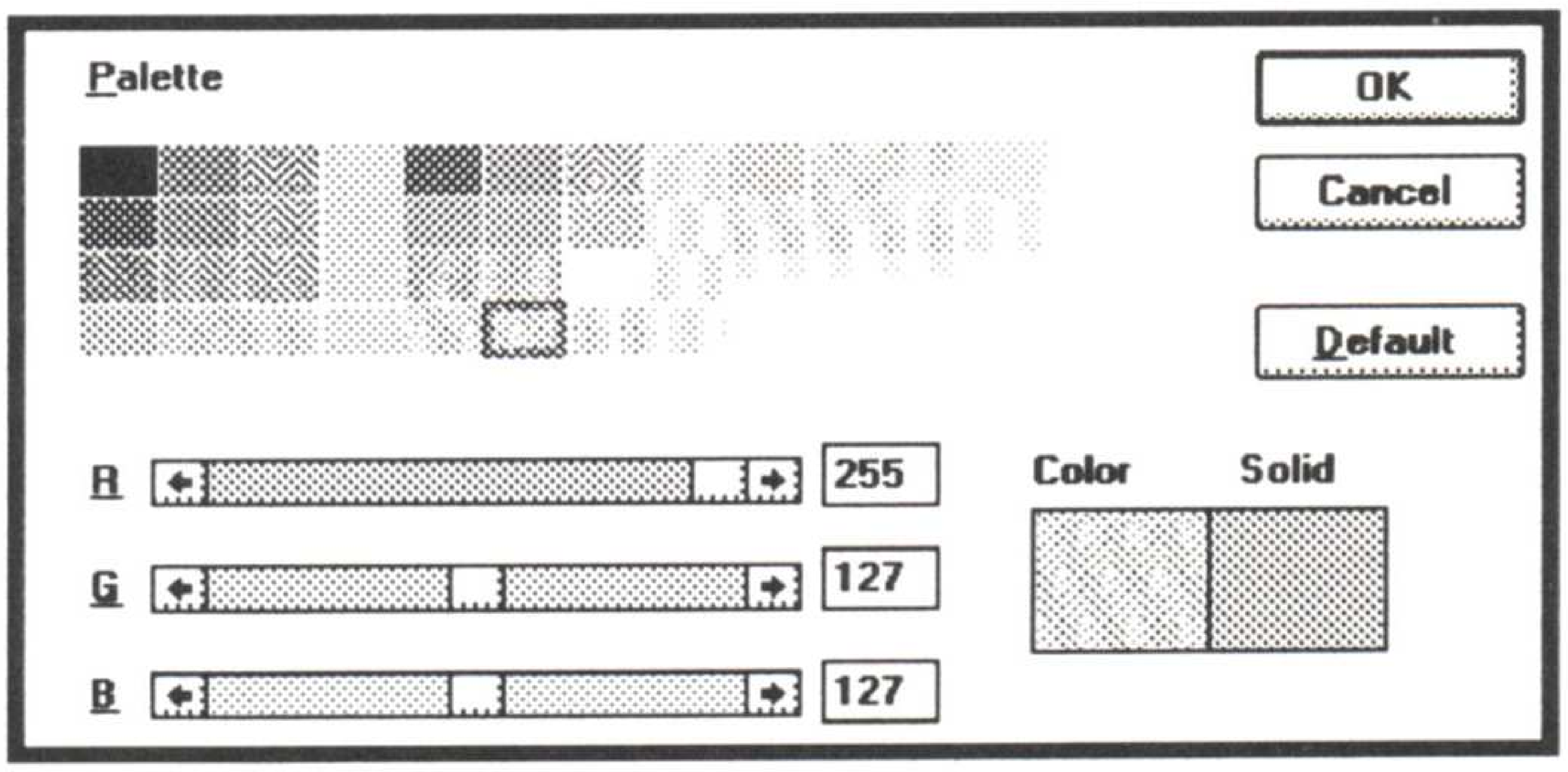


Figure 1-8 Palette Dialog Box

Palette

The Palette boxes display the range of colors for this LightShip screen. Other screens are not affected by this palette.

Color

The Color box displays the color you selected from the Palette.

If the color is solid, you can use it for any item. If the color is dithered (made up of differently colored dots), you can use it for any item except text characters or draw objects that are lines or outlined.

Solid

The Solid box displays the solid representation of the color you selected. If the color you selected is solid, the two boxes show identical colors.

R, G, B

The R, G, and B scroll bars change the amount of Red, Green, and Blue for the selected color. Colors in the Color and Solid boxes change accordingly. You can also type the palette index numbers in the text boxes next to the R, G, and B boxes.

A color's amount of R, G, and B is represented by numbers, as shown in the boxes to the right of the scroll bars. (The Palette List command in the Debug window displays the R, G, and B numbers for all the colors currently in the palette. For more information, refer to the Special Debug command.)

Default

The Default button resets the palette to the colors that existed upon opening the Palette dialog box.

Optimize Palette

The Optimize Palette command uses palette-relative colors for 256-color mode. As a result, the palette displays 256 solid colors, optimized with the closest entries in the system palette. Otherwise, for 256-color mode, LightShip displays 48 solid colors only.

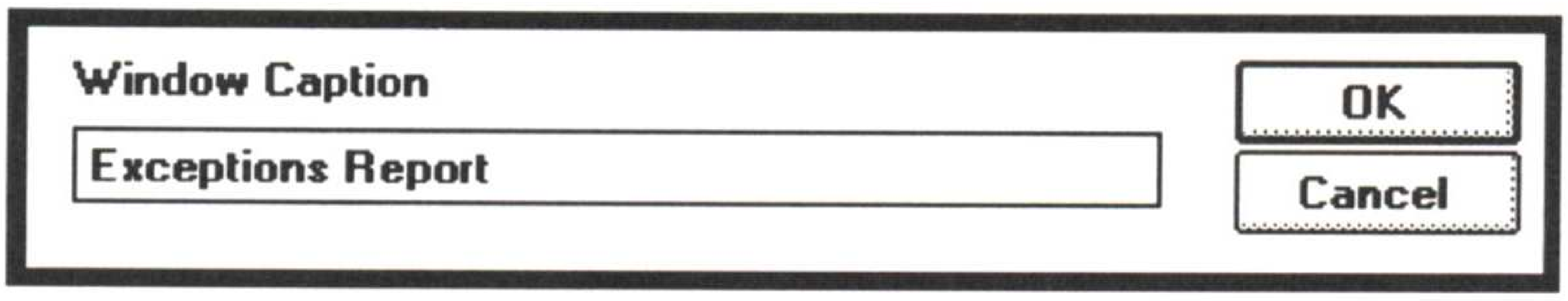
Optimize Palette has no effect for devices using 16-color mode. These devices use the explicit R, G, and B colors.

You might want to turn off Optimize Palette if you are running an application on both a 256-color display adapter and a 16-color display adapter and you want the application to appear the same way.

Window Caption...

The Window Caption command displays a screen title in the title bar at the Browse and Capture level instead of the screen's filename. This title also appears in place of the filename in the Retrace Path dialog box.

Use the Window Caption dialog box to provide a one-line screen title.



Exceptions Report

Figure 1-9 Window Caption Dialog Box

Save Window Position

The Save Window Position command saves a screen's window size and position so that it always appears the same way.

Use Save Window Position in the top screen to set the same size for all called screens. This makes the repainting of screens faster and more visually pleasing. LightShip uses this size and position unless it encounters another screen using its own window size and position.

Hide Menu Bar

The Hide Menu Bar command removes the File, Edit, and Special menus from the menu bar at the Browse and Capture levels. If you have user-defined menus, only they are displayed. If you do not have user-defined menus, no menus are displayed and the menu bar is removed.

Hide Scroll Bars

The Hide Scroll Bars command hides the screen's scroll bars at the Browse and Capture levels.

If you hide scroll bars, you can define a hotspot or menu action that scrolls a document. See the Document Vertical Scroll and Horizontal Scroll commands to make scrolling available at all levels. See *Chapter 10: Actions*, for information about setting up scrolling actions.

Scroll By Page

The Scroll By Page command enables you to scroll page by page through all document objects that use the horizontal and vertical scroll bars (but not local scroll bars).

One page is the amount of data currently showing in the document object window. You can scroll using any of the following: the scroll arrows; the UP, DOWN, LEFT and RIGHT ARROWS; the PG UP and PG DN keys; and Scroll actions, discussed in *Chapter 10: Actions*.

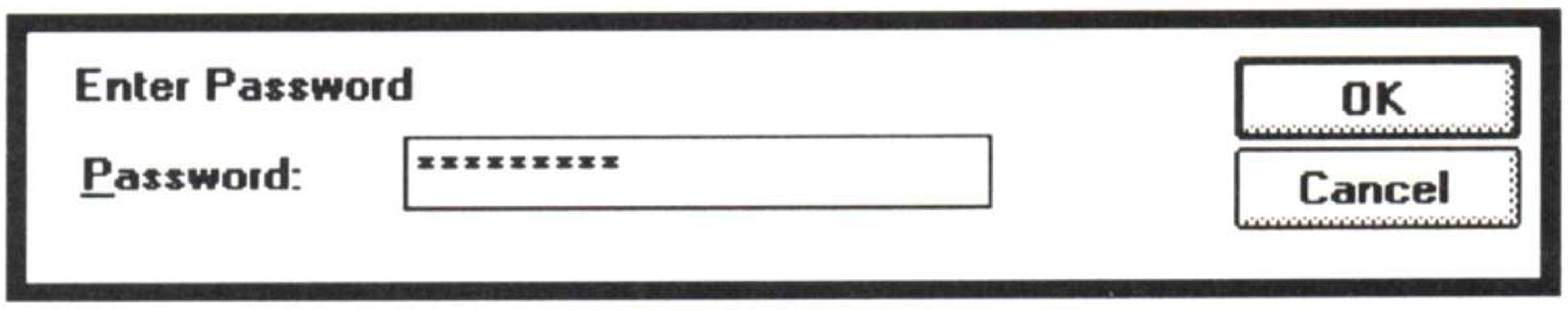
Turn this off to scroll documents with the same number of lines simultaneously. If one of them has fewer lines, it stops scrolling first. Or if one document has much fewer lines than the other, for example half as many lines, it scrolls one line to the other document's two lines.

For information about making the scroll bars available, see the Document Vertical and Horizontal Scroll commands in *Chapter 3: Document Menu*.

Protect Author Level...

The Protect Author Level command lets you specify a password to protect this screen at the Author level. LightShip prompts you to type this password every time you open this screen at the Author level or move from Browse to Author. As an exception, if you return in retrace path to this screen, you will not be prompted.

Use the Enter Password dialog box to enter a password of up to 20 alphanumeric characters. Passwords are not case-sensitive.



Password: *********

Figure 1-10 Enter Password Dialog Box

Use the Confirm Password dialog box to retype the password as you typed it in the Enter Password dialog box. This dialog box appears when you close the Enter Password dialog box.

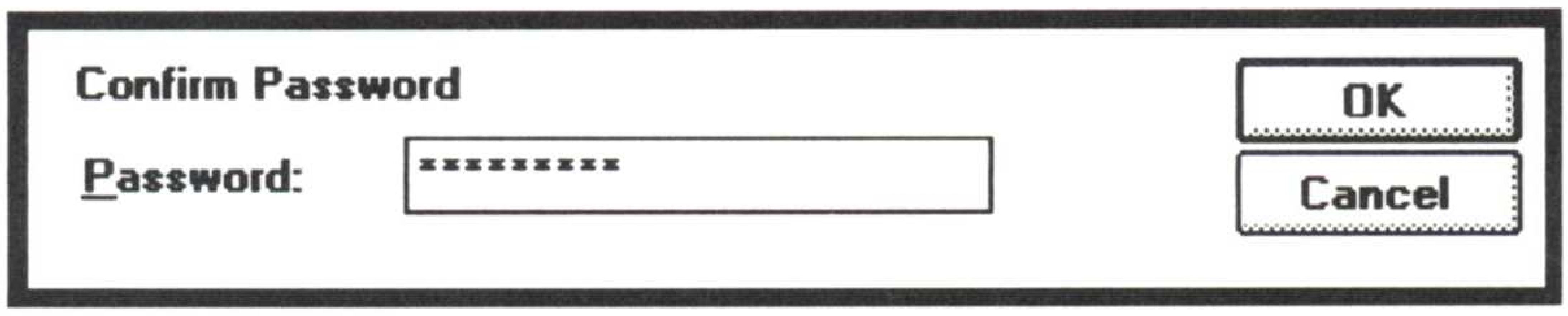


Figure 1-11 Confirm Password Dialog Box

An incorrect password causes LightShip to display a "Confirmation password is not identical" message. Then LightShip opens the Enter Password dialog box again.

The next time you open this screen, LightShip prompts you for the screen password. A correct password opens the screen; an incorrect password causes LightShip to display an "Incorrect Password" message and then open the Enter Password dialog box.

LightShip keeps prompting you until you type the correct password or you cancel out of this box.

You can turn off the password protection for the Author level by choosing the Options Unprotect Author Level command.

☞ **Important**

Make sure that you remember the password you define because the screen becomes unusable if you forget it.

Screens can have an Author level and a Browse level password, and the passwords can be different.

Protect Browse Level...

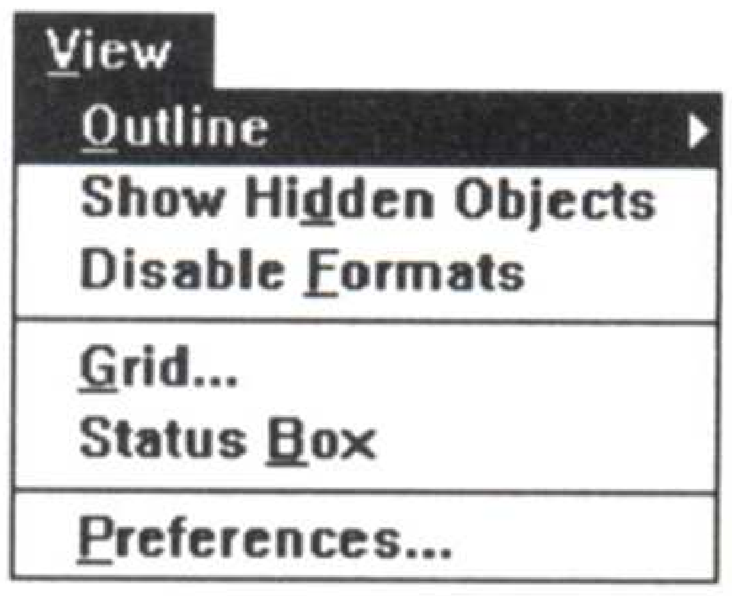
The Protect Browse Level command lets you specify a password to protect this screen at the Browse level. LightShip prompts you to type this password every time you open this screen at the Browse level. As an exception, if you return in retrace path to this screen, you will not be prompted.

This command performs the same way as the Protect Author Level command with some exceptions:

- The Browse level password can be different from the Author level password.

- If you type a Browse level password only, LightShip prompts you with "Browse level protected without Author level."
- If you enter this screen from the Author level, you will not be prompted for the Browse level password.

You can turn off the password protection for the Browse level by choosing the Options Unprotect Browse Level command.



View Menu

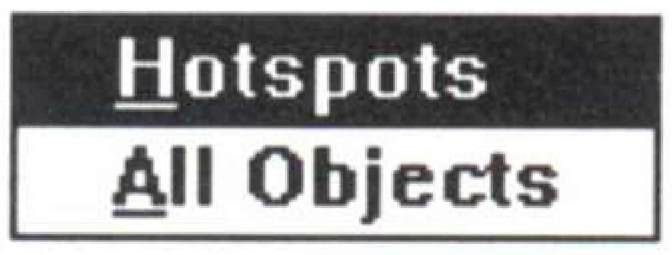
Use the View menu to change the screen display and help you develop an application in the following ways:

- Outline objects to show overlapping and hidden objects.
- Disable the effects of format objects.
- Use a grid to align objects and snap. them into place.
- Display a status box.
- Specify LightShip preferences.

The View menu command settings are saved in the LS.INI file (LightShip startup file). Any command you turn on remains on from session to session until you turn it off. For information about LS.INI, refer to the *LightShip User's Guide*.

Outline

The Outline command opens a cascading menu with commands for outlining hotspots and outlining all objects.



Hotspots

The Hotspots command outlines all hotspots on the screen with a dotted line. Since hotspots are not always displayed, it helps to outline them while developing an application.

All Objects

The All Objects command outlines all the objects on the screen with a dotted line. Outlines point out objects that are overlapping or not displayed.

Show Hidden Objects

The Show Hidden Objects command displays these objects, which do not usually display on the screen:

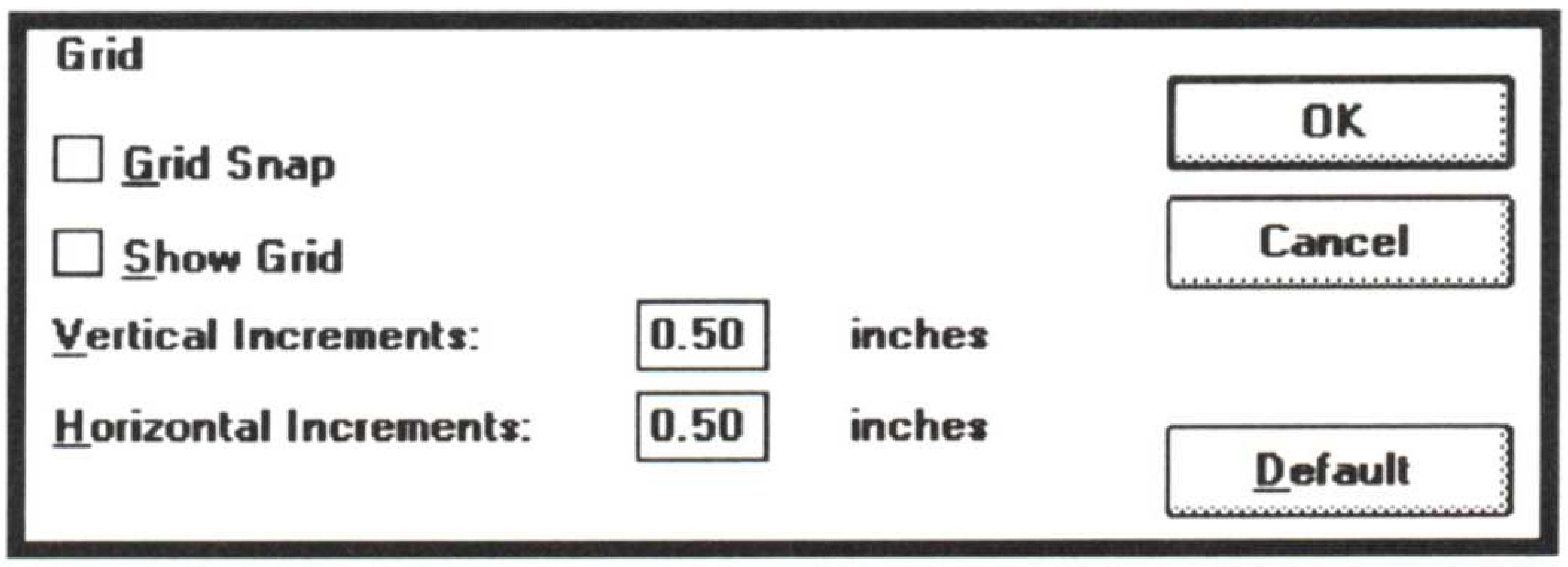
- Hidden document objects
- Format objects labelled "Format"
- Menu objects with their menu bar name and menu item name

Disable Formats

The Disable Formats command turns off the format object effects on document objects at the Author level. Document objects that are modified by format objects are displayed in their original state.

Grid...

The Grid command aligns objects while moving, resizing, and creating them. Use the Grid dialog box to snap objects into position using specific horizontal and vertical increments and to display the grid. (Or use the CTRL key and drag an object to snap it to the specified increments without having to turn on the Grid Snap option.)



Grid

☐ Grid Snap

☐ Show Grid

Vertical Increments: 0.50 inches

Horizontal Increments: 0.50 inches

Figure 1-12 Grid Snap Dialog Box

Grid Snap

The Grid Snap option snaps objects to the nearest grid increment when you move, resize, and create them.

Show Grid

The Show Grid option displays vertical and horizontal grid lines that are spaced according to the vertical and horizontal increments. You can display a grid whether Grid Snap is turned on or off.

Vertical Increments

The Vertical Increments box specifies a number between 0.1" and 1.0" to set the vertical grid increments.

Horizontal Increments

The Horizontal Increments box specifies a number between 0.1" and 1.0" to set the horizontal grid increments.

Default

The Default button resets the grid to the default measurements of 0.5" vertical increments and 0.5" horizontal increments.

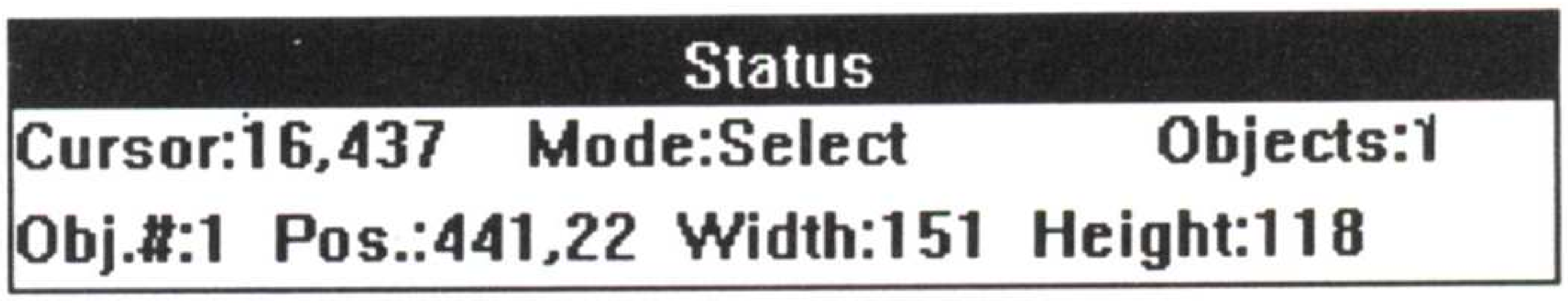
Status Box

The Status Box command displays information about the objects and cursor position.

If no object or more than one object is currently selected, this box displays one line of information about the cursor position, mode, and number of objects on the screen.

If one object or group is selected, this box displays two lines of information: the same information as noted above as well as the object or group number, position, and size of the selected item.

You can turn off the Status Box by turning off the command or double-clicking on the Status caption in the box. If you exit from LightShip without turning off the Status Box, it displays in the same position from session to session.



Status

Cursor:16,437 Mode:Select Objects:1

Obj.#:1 Pos.:441,22 Width:151 Height:118

Figure 1-13 Status Box

Cursor

Cursor is the current cursor position in pixels. The first number is the x (horizontal) coordinate, and the second one is the y (vertical) coordinate. The top, left corner of the screen has the coordinates of 0, 0.

Mode

Mode is the current Author level mode. For details about Select, Create, and Point modes, refer to the *LightShip User's Guide*.

Objects

Objects is the current number of objects. You can have up to 1,000 objects on each screen.

Obj.# or Grp.#

Obj.# or Grp.# is the index number of the selected object or group. Objects and groups are numbered from back to front, where object #1 is behind the other objects and group #1 is behind the other groups.

An object's or group's number changes if you delete an object closer to the beginning of the list, or if you reorder objects using the Special Send and Bring commands.

☞ **Important**

Use the Pos., Width, and Height statistics when you use the POSITION function in a hotspot or menu action. For more information about the POSITION function, refer to *Chapter 11: Functions*.

Pos.

Pos. is the object's exact top-left corner position in pixels. The first number is the x (horizontal) coordinate and the second number is the y (vertical) coordinate.

Width

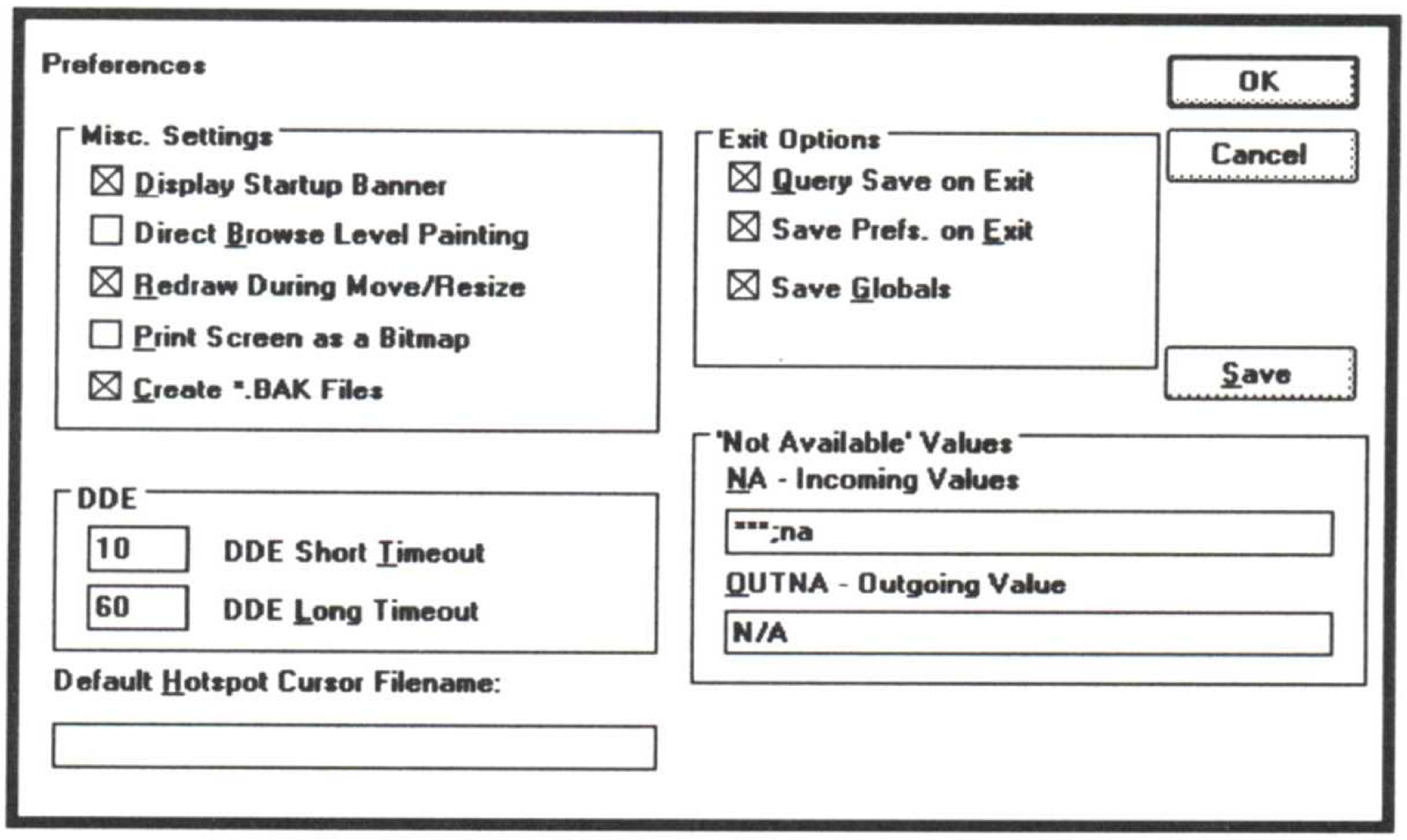
Width is the selected object's width in pixels.

Height

Height is the selected object's height in pixels.

Preferences...

The Preferences command specifies settings that customize LightShip's performance and affect all LightShip screens. Use the Preferences dialog box to change settings that are saved in the LS.INI file.



Misc. Settings
☒ Display Startup Banner
☐ Direct Browse Level Painting
☒ Redraw During Move/Resize
☐ Print Screen as a Bitmap
☒ Create *.BAK Files

Exit Options
☒ Query Save on Exit
☒ Save Prefs. on Exit
☒ Save Globals

DDE
10 DDE Short Timeout
60 DDE Long Timeout

Default Hotspot Cursor Filename:

'Not Available' Values
NA - Incoming Values: "";na
OUTNA - Outgoing Value: N/A

Figure 1-14 Preferences Dialog Box

Display Startup Banner

The Display Startup Banner option flashes the About LightShip box whenever you start the LightShip program. This box displays LightShip's version and license information.

Direct Browse Level Painting

The Direct Browse Level Painting option paints one object at a time when you open the screen. Turn this off to paint all objects at once. Both ways paint the screen in the same amount of time.

Redraw During Move/Resize

The Redraw During Move/Resize option immediately redraws objects as you move and resize them. Otherwise, LightShip moves or resizes an outline of the object, and then redraws the object when you finish dragging it. Both ways redraw an object in the same amount of time.

Print Screen as a Bitmap

The Print Screen as a Bitmap option prints the screen in bitmap format to the default printer whenever you choose File Print. The output is an exact replica of the screen display.

Turn this off to have Windows print the screen and, if necessary, substitute fonts.

Create *.BAK Files

The Create *.BAK Files option saves a backup file of the open .LSF file with changes up to the last File Save. The backup file is named filename.BAK, where filename is the LightShip filename.

☞ **Important**

DDE Timeouts occur during a DDE Request or Execute when LightShip does not get a response from the server within a certain amount of time. LightShip quits looking for a response and displays a message that the request or execute timed out. You can break out of a DDE Request or Execute manually with the ESC key. You can also control the amount of time to wait using the following options.

DDE Short Timeout

The DDE Short Timeout box, which is 10 seconds by default, is used for actions that normally require an immediate response, such as initiating a DDE channel. In the text box, type the number of seconds to wait before displaying a message.

DDE Long Timeout

The DDE Long Timeout box, which is 60 seconds by default, is used for actions that require more time, such as requesting data or sending commands to the server. In the text box, type the number of seconds to wait before displaying a message.

Default Hotspot Cursor Filename

The Default Hotspot Cursor Filename box specifies the default cursor to appear on hotspots at the Browse and Capture levels.

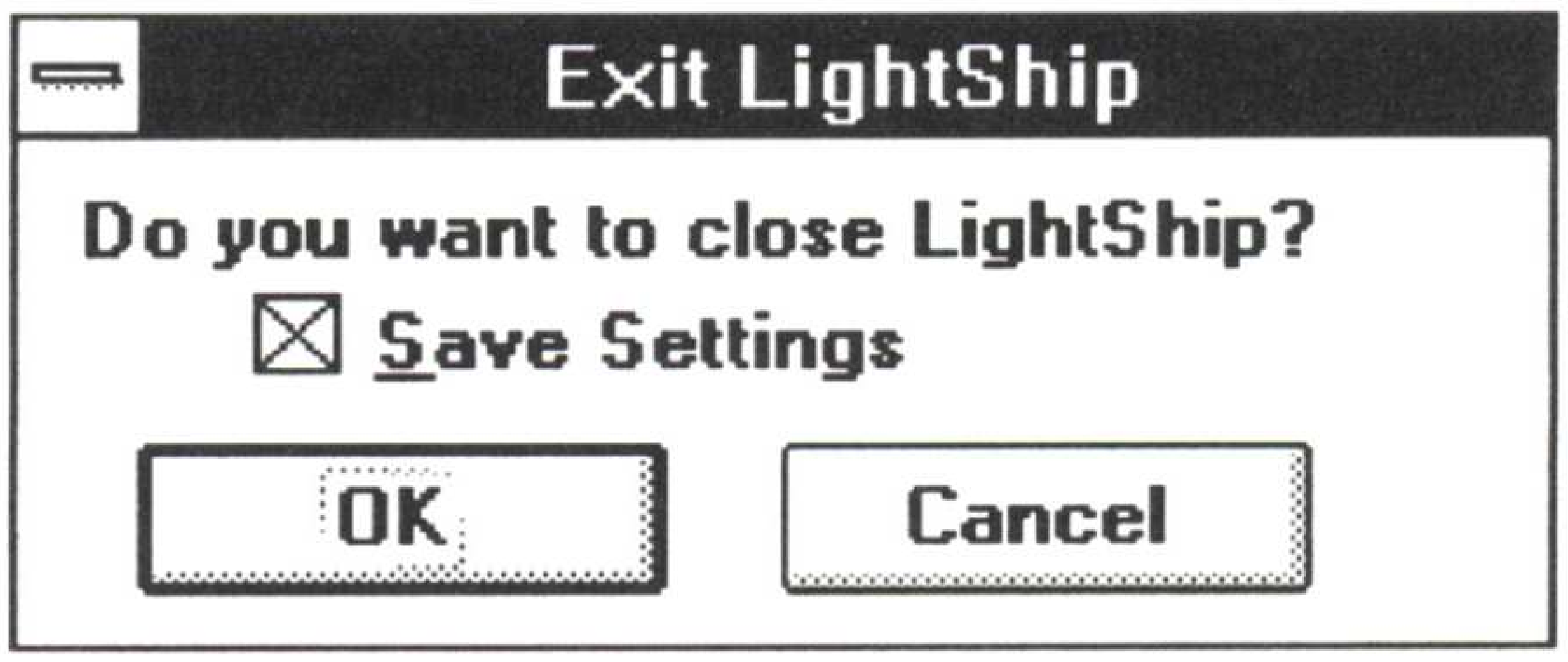
Use the text box to provide a cursor filename with a .CUR extension. The file must be a 32 x 32 monochrome bitmap that conforms to the Windows 3.0 Cursor Resource File format.

If you do not provide a filename, LightShip uses the LightShip hand cursor.

For information about overriding the default cursor for an individual hotspot, refer to the Hotspot Cursor File command in *Chapter 6: Hotspot Menu*.

Query Save on Exit

The Query Save on Exit option prompts you to save LightShip settings every time you choose File Exit.



Do you want to close LightShip?

☒ Save Settings

Figure 1-15 Exit LightShip Dialog Box

In the Exit LightShip dialog box, turn on the Save Settings check box to save LightShip settings. Turn it off to cancel any settings that changed in this session.

Turning the Save Settings box on or off makes it the default for the next session. The Save Prefs. on Exit option changes each time to reflect the switch.

Save Prefs. on Exit

The Save Prefs. on Exit option automatically saves the preference settings when you choose File Exit, even if no settings have changed.

When Query Save on Exit is turned off, this option saves the settings without prompting you. When Query Save on Exit is turned on, whichever way you turn the Save Settings switch causes the Save Prefs. on Exit option to change accordingly.

Save Globals

The Save Globals option saves global variable names and values in their current state.

If global variables change during the session, turn on Save Globals to update the [Globals] section of the LS.INI file. Otherwise, the global variable changes are not saved when you close this screen.

Save

The Save button saves the settings immediately without waiting for a File Exit command. When you choose Save or OK, LightShip also performs a Calculate Now command and repaints the screen.

☞ **Important**

For the following options, the document object must be affected by a format object in order to display the new treatment of unavailable data.

NA - Incoming Values

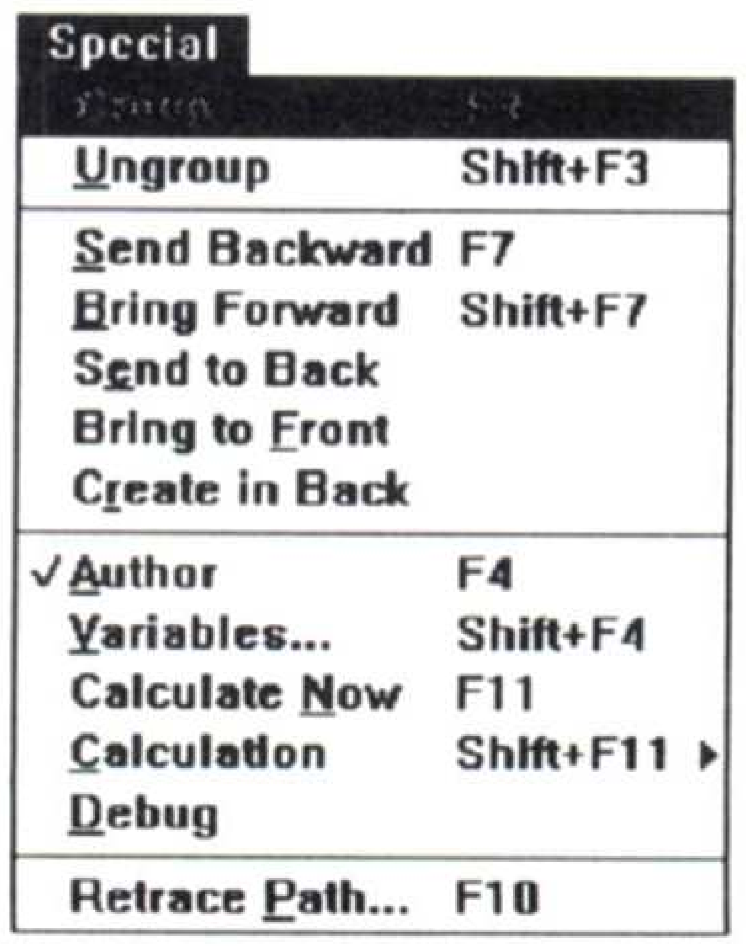
The NA - Incoming Values box specifies any incoming values that document object sources use to represent unavailable data.

Use the text box to enter one or more values, separated by semicolons (;). For example, ***; ?; na. The first character cannot begin with a digit, a minus sign (-), an open or closed parenthesis ( ), an at sign (@), or a period (.).

OUTNA - Outgoing Value

The OUTNA - Outgoing Value box specifies a single value that is used to display unavailable data in document objects. For example, enter n/a, *, or - .

Special Menu



Use the Special menu to perform special operations such as change the front-to-back order of objects, move between the Author and Browse levels, initialize variables, reaccess data from external sources, open the Debug window, and display the retrace path.

Group (F3)

The Group command groups the selected objects as a single object. Although you cannot group the same object twice, you can create multiple groups of different objects.

You can use these commands with groups:

- Edit Cut, Copy, Paste, Duplicate, Clear
- Special Bring Forward/to Front
- Special Send Backward/to Back

Objects remain grouped until you choose Special Ungroup. For information about selecting multiple objects, refer to the *LightShip User's Guide*.

Ungroup (SHIFT+F3)

The Ungroup command removes the group effect from the selected group and returns the objects back to multiple-selected objects.

Send Backward (F7)

The Send Backward command sends a single object or group behind the object that is immediately behind it.

Bring Forward (SHIFT+F7)

The Bring Forward command moves a single object or group in front of the object that is immediately in front of it.

Send to Back

The Send to Back command sends the selected object(s) or group behind all objects.

Bring to Front

The Bring to Front command brings the selected object(s) or group(s) to the front of all other objects.

Create in Back

The Create in Back command creates all new objects behind the existing objects. Usually LightShip adds new objects in front of the others.

This command stays on from session to session until you turn it off.

Author (F4)

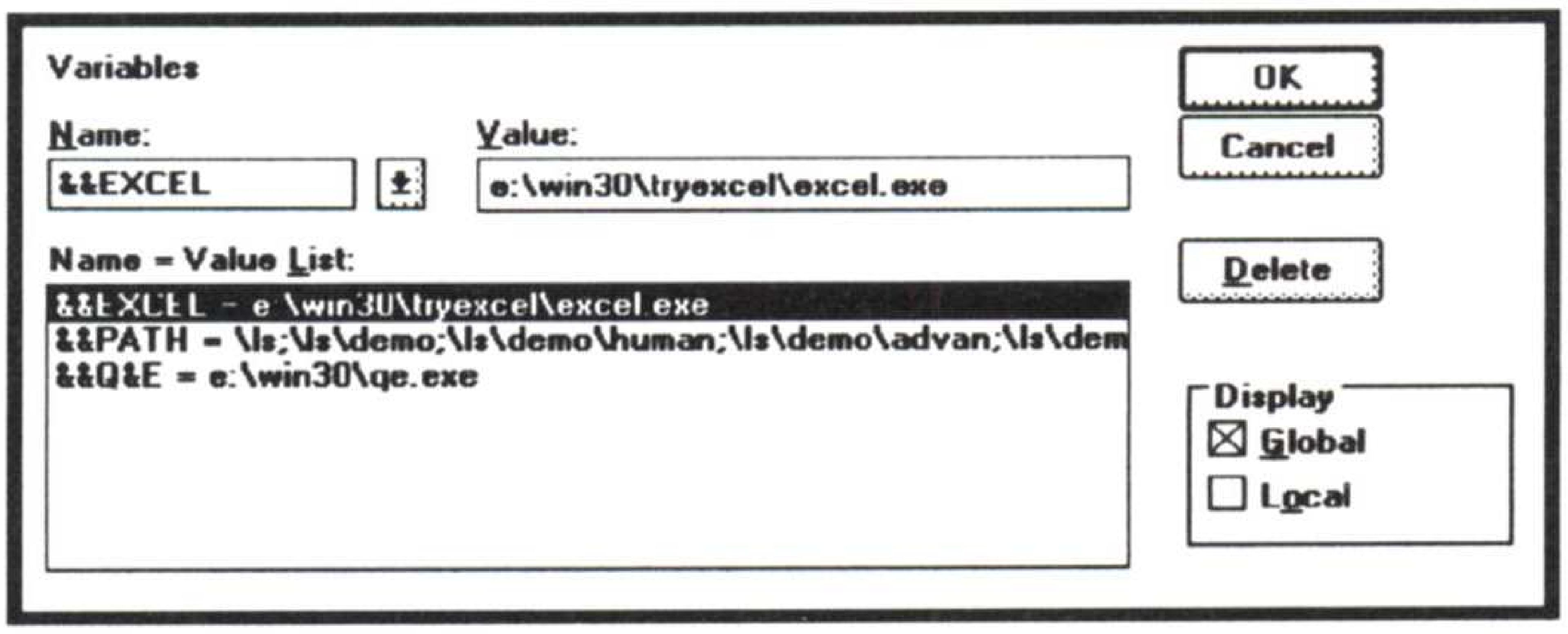
The Author command switches the screen between the Author level (for developing applications) and the Browse level (for running applications).

Special Author also appears at the Browse level if Options Hide Menu Bar is off. The Author command performs the same way at both the Author and Browse levels. This command does not appear at the Capture level, which allows no movement other than exiting to DOS.

Variables... (SHIFT+F4)

The Variables command specifies the current state of local and global variable names and values. Use the Variables dialog box to specify local and global variable names and values. If a value changes, this dialog box reflects the new value of the variable. For information about other ways to specify local and global variables, refer to the *LightShip User's Guide*.

Local variables are known only to this screen; they are saved with the screen and restored when you open the screen again. Global variables are available in any screen; they are saved in the LS.INI file if you turn on the Save Globals option in the View Preferences dialog box.



Name: &&EXCEL

Value: e:\win30\tryexcel\excel.exe

Name = Value List:

```
&&EXCEL - e \win30\tryexcel\excel.exe
&&PATH = \ls;\ls\demo;\ls\demo\human;\ls\demo\advan;\ls\dem
&&Q&E = e:\win30\qe.exe
```

☒ Global
☐ Local

Figure 1-16 Variables Dialog Box

Name

The Name box specifies a local or global variable name, which can be up to 20 characters. The Display Local or Display Global option must be turned on to change variables for that type. If both are turned on when you are adding a variable, LightShip assumes it is a local variable.

Local variable names cannot begin with a number, an at sign (@), or an ampersand (&). If you type an ampersand for the first character, LightShip erases it from the name.

Global variable names must begin with an ampersand (&). If you do not type an ampersand, LightShip adds it automatically.

Press TAB to move to the Value text box.

Value

The Value box specifies a variable value for the local or global variable name. Variable values can have up to 4,000 characters. LightShip does not perform a variable substitution on the value you enter. To view the results of a variable, you must reference it.

A value can be a container for multiple values in a row and column structure. To delimit the values in a row with TABS, press CTRL+TAB between each value. Column delimiters appear as a single bar (|). To delimit one row from another using a line feed character, press CTRL+ENTER at the end of a row. Row delimiters display as two bars (||). Press SHIFT+TAB to move back to the Value box, if necessary.

Name = Value List

The Name = Value List box lists the current state of the variables for this screen. It displays local variables if you turn on the Display Local option and global variables if you turn on the Display Globals option.

Select a variable to display in the Name and Value boxes where you can edit or delete it.

Delete

The Delete button deletes the selected variable name and value.

Display Global

The Display Global option causes the current global variables to be listed in the Name = Value List box. This option enables you to change global variables.

Remember to save any changes to global variables using the Save Globals option in the View Preferences dialog box. Otherwise, the [Globals] section of the LS.INI file will not be updated and you will lose the changes.

☞ **Important** You can display global and local variables at the same time. If both options are turned on while you are typing a new variable name, LightShip assumes that it is a local variable unless you type an ampersand as the first character.

Display Local

The Display Local option causes the current local variables to be listed in the Name = Value List box. This option allows you to change local variables.

Calculate Now

(F11)

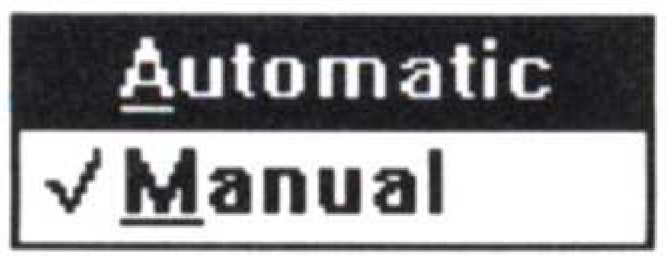
The Calculate Now command updates all parameter values that change and reissues a request for external data. Use Calculate Now to improve performance by updating the screen only after several changes have occurred.

Special Calculate Now also appears at the Browse and Capture levels if Options Hide Menu Bar is off. Special Calculate Now performs the same way at all levels.

Calculation

(SHIFT+F11)

The Calculation command opens a cascading menu with commands for turning on and off automatic calculation.



Automatic

The Automatic command controls the updating of parameter values and the reissuing of requests for external data. Use Automatic when you want to continually update the screen when changes occur.

When Automatic is on:

- Any changes to parameter values are made immediately.
- When a literal or variable reference changes in a document's or image's DDE Data Request dialog box, the request is reissued.
- When a literal or variable reference changes in the filename of a Document Text File dialog box or an Image Source File dialog box, the request is reissued.
- When the source data changes for a document or image whose source is a DDE Request, the request is reissued.

☞ **Important**

If Automatic is off and you turn it on, LightShip updates all parameter values and requests for external data that have occurred since you last turned off Calculation Automatic or issued a Calculate Now command.

Manual

The Manual command turns on manual calculation. Use Manual when you want to selectively update the screen with changes at certain times, but not continually.

When Manual is on:

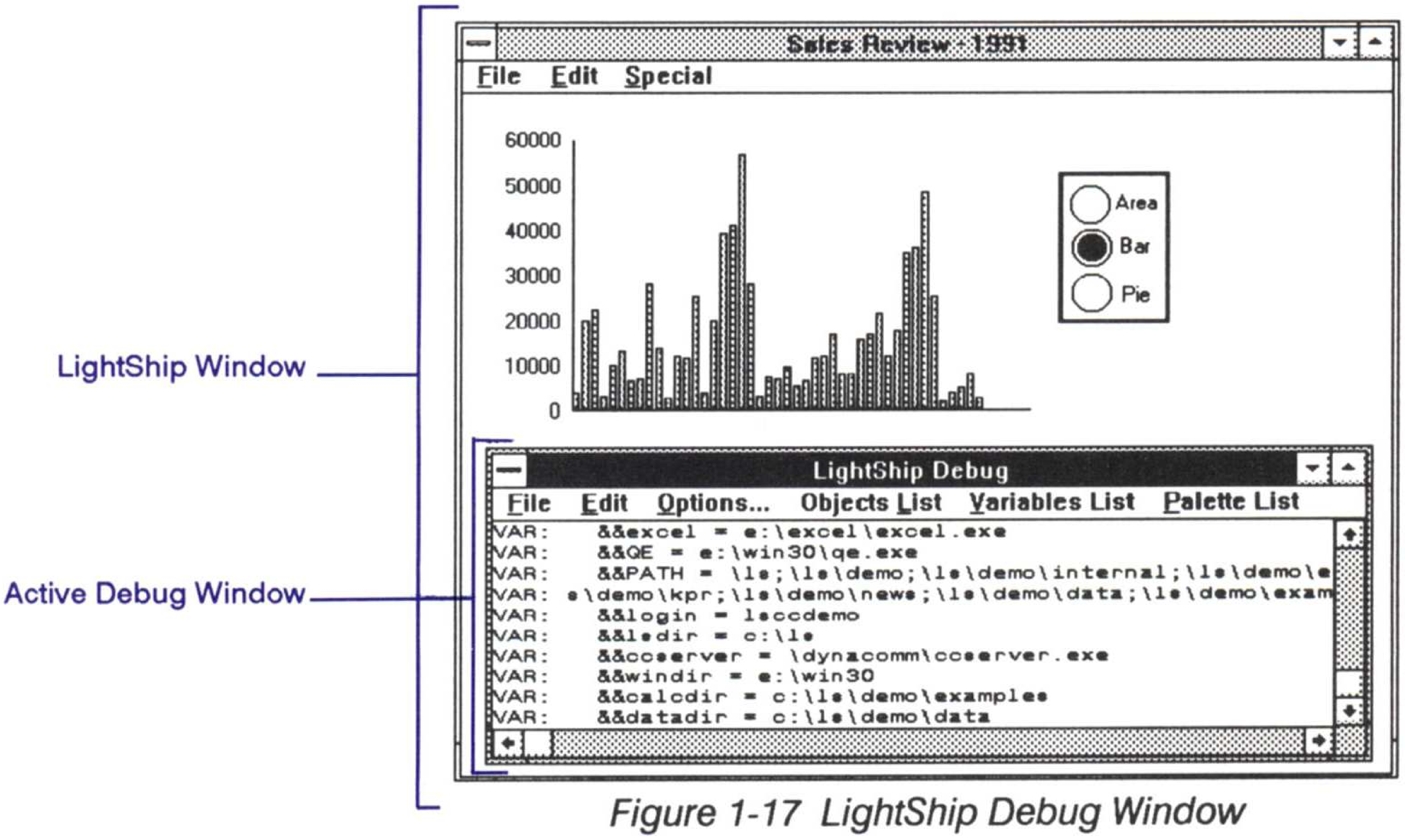
- When you make a literal change in the filename of a Document Text File dialog box or Image Source File dialog box, the request is reissued.
- When you make a literal change in a document's or image's DDE Data Request dialog box, LightShip prompts you to "Perform DDE operations" and update the data. Choose Yes to carry out the request or No to cancel the request and clear the document window. This dialog box also appears when you open the screen while Calculation Manual is on.

Debug

The Debug command opens a window that records parameters, variables, objects, and actions during a LightShip session as long as the Debug window is activated.

Use the LightShip Debug window to list the following:

- Parameter values, as they are assigned and referenced
- Actions, as they are executed
- Objects and their attributes
- Variable values
- The Red, Green, and Blue index numbers for the colors currently in the palette



```
VAR:    &&excel = e:\excel\excel.exe
VAR:    &&QE = e:\win30\qe.exe
VAR:    &&PATH = \ls;\ls\demo;\ls\demo\internal;\ls\demo\e
VAR: s\demo\kpr;\ls\demo\news;\ls\demo\data;\ls\demo\exam
VAR:    &&login = lsccdemo
VAR:    &&lsdir = c:\ls
VAR:    &&ccserver = \dynacomm\ccserver.exe
VAR:    &&windir = e:\win30
VAR:    &&calcdir = c:\ls\demo\examples
VAR:    &&datadir = c:\ls\demo\data
```

Figure 1-17 LightShip Debug Window

You can resize the Debug window to share the screen with LightShip, run Debug behind the LightShip screen, or minimize the Debug window to an icon. If you minimize both the LightShip and Debug windows to icons, the Debug icon becomes hidden. If you maximize LightShip, the Debug window hides behind it. The LightShip Debug window appears in the same position and size from session to session until you close it.

When you display information in the Debug window, the information is appended to the end of the display, up to a fixed number of lines. You might want to choose Edit Clear to clear the window before displaying new information.

If you choose the Objects List, Variables List, or Palette List command and then change something on the screen that is listed in the Debug window, choose the command again to update the list.

File

Use the File menu to print the window display and exit from the Debug window.

Print	The Print command sends the window to the default printer, or to a file, or to both the printer and a file. This depends on the options you turn on using the Debug Options command. The output has a heading that includes the title "LightShip Debug", the date, time, page number, and the .LSF filename.
Printer Setup	The Printer Setup command opens a printer dialog box so that you can change the default printer and printer settings.
Exit	The Exit command closes the Debug window and returns you to the LightShip screen.

Edit

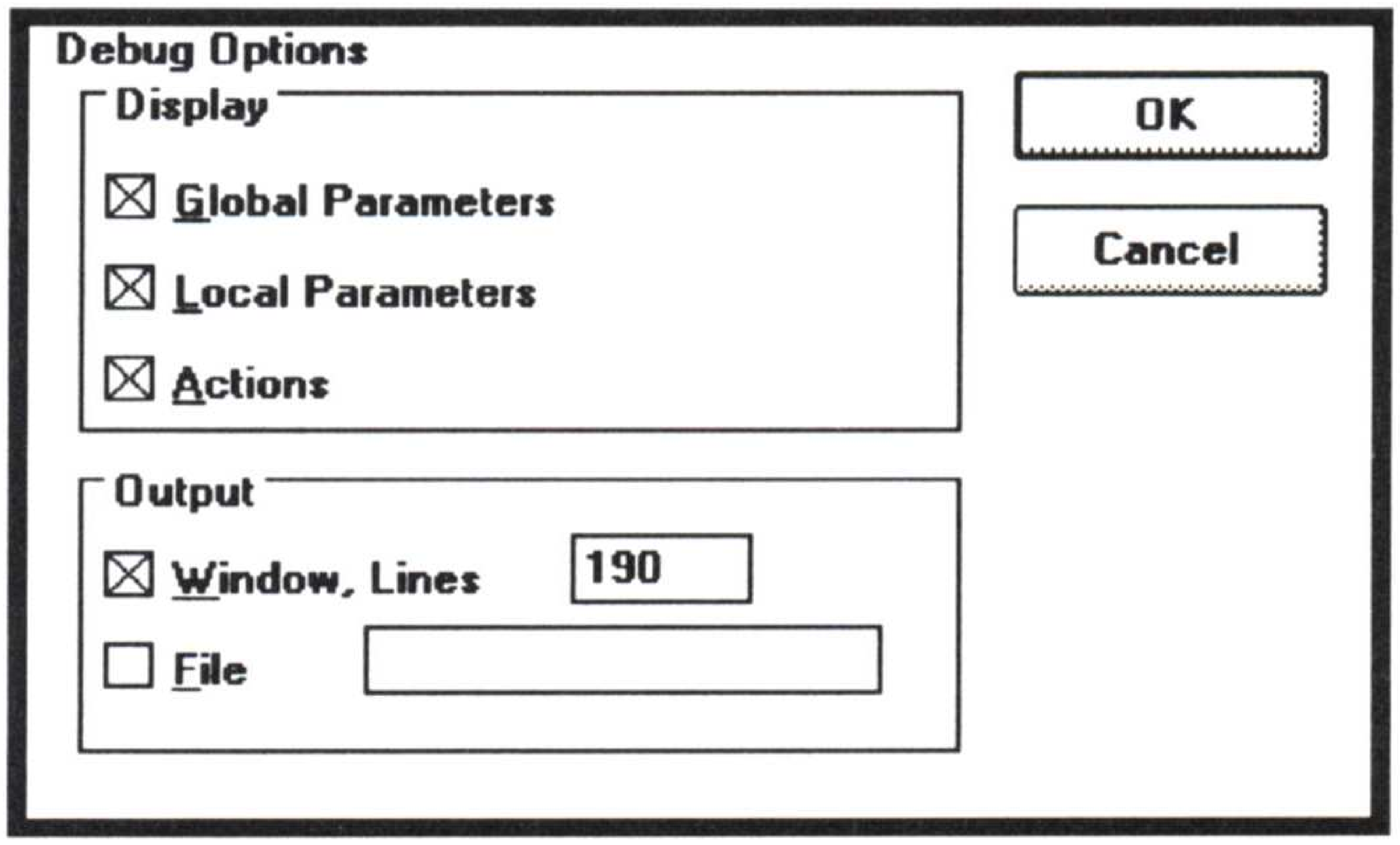
Use the Edit menu to copy the screen to the Clipboard and clear the window.

Copy	The Copy command copies the information on the window to the Clipboard in CF_TEXT format.
Clear	The Clear command erases the information on the window.

Options...

The Options command lists parameters and actions on the Debug window or in a file. Use the Debug Options dialog box to specify the items to display and the report destination.

The := symbol in the output means that a value has been assigned to a parameter. The => symbol means that a value has been retrieved.



Debug Options

Display

☒ Global Parameters

☒ Local Parameters

☒ Actions

Output

☒ Window, Lines 190

☐ File

Figure 1-18 Debug Options Dialog Box

Global Parameters

The Global Parameters option specifies that you want to list global parameter names and values as they are stored and retrieved.

Local Parameters

The Local Parameters option specifies that you want to list local parameter names and values as they are stored and retrieved.

Actions

The Actions option lists the actions and their object numbers when they are executed at the Browse and Capture levels. For menu objects, it lists the menu-bar name and menu-item name instead of the object number.

Window, Lines

The Windows option sends the window display to the Debug window.

The Lines text box specifies the number of lines between 50 and 500 that you want to display. If the information exceeds the specified number of lines, LightShip erases the top line and appends the new one to the bottom of the list.

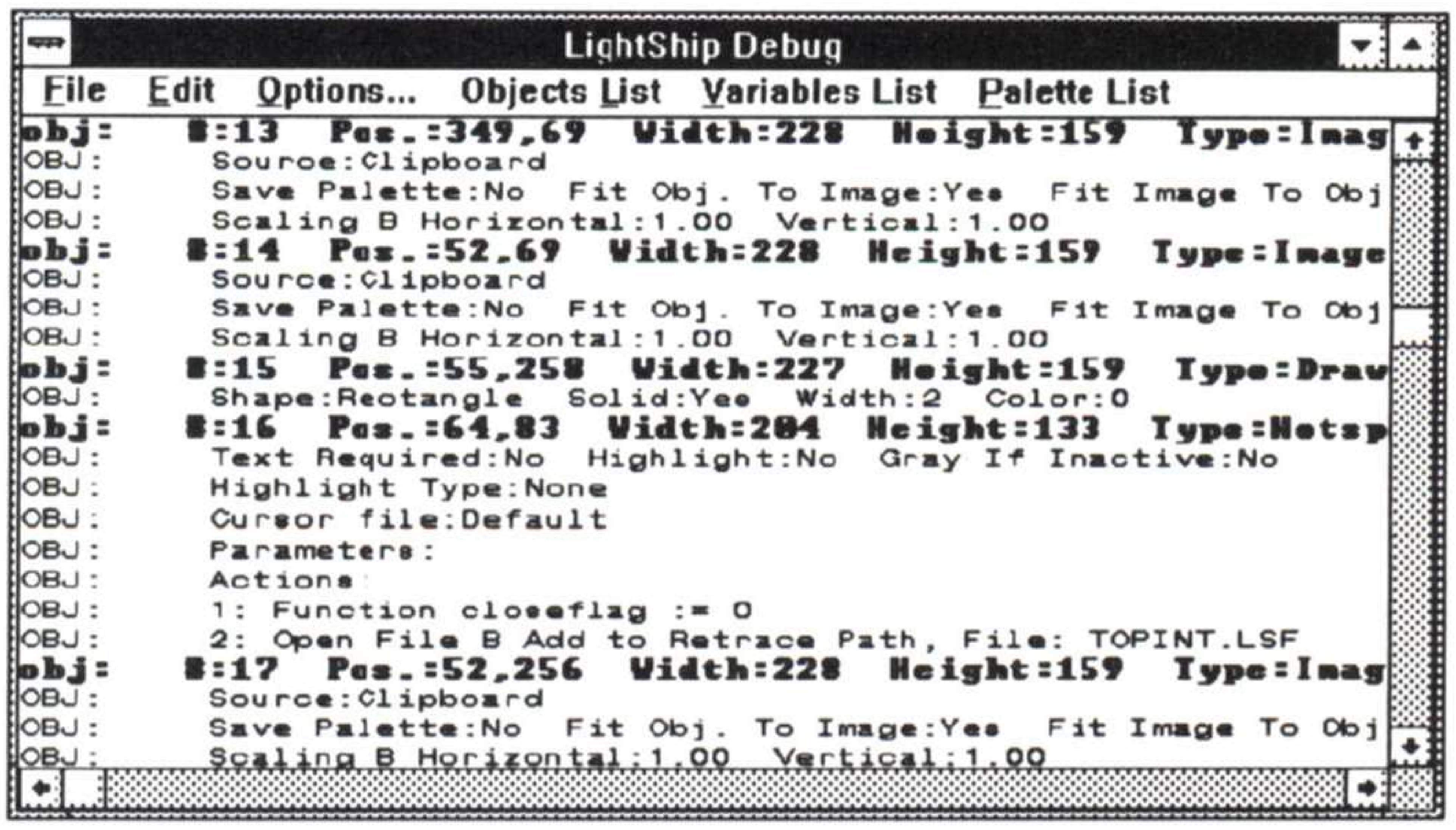
File

The File option sends the output to an ASCII text file, whose name you enter in the text box. If you do not provide an extension, LightShip does not provide any default extension. You can print this file from DOS or the Windows Notepad.

Objects List

The Objects List command lists the screen's objects in bold text. Objects are listed from back to front, where object #1 is behind the others. The list includes the object's number, type, position, width, height, the parameters associated with it, and other attributes. If objects are grouped, it displays the group's number.

The line describing an object's position is in bold. Drag the mouse over this line and the cursor changes to a vertical arrow. When you double-click on this line at the Author level, LightShip is activated with that object selected.



```
obj:    #:13  Pos.:349,69  Width:228  Height:159  Type:Imag
OBJ:        Source:Clipboard
OBJ:        Save Palette:No  Fit Obj. To Image:Yes  Fit Image To Obj
OBJ:        Scaling & Horizontal:1.00  Vertical:1.00
obj:    #:14  Pos.:52,69  Width:228  Height:159  Type:Image
OBJ:        Source:Clipboard
OBJ:        Save Palette:No  Fit Obj. To Image:Yes  Fit Image To Obj
OBJ:        Scaling & Horizontal:1.00  Vertical:1.00
obj:    #:15  Pos.:55,258  Width:227  Height:159  Type:Draw
OBJ:        Shape:Rectangle  Solid:Yes  Width:2  Color:0
obj:    #:16  Pos.:64,83  Width:204  Height:133  Type:Hotsp
OBJ:        Text Required:No  Highlight:No  Gray If Inactive:No
OBJ:        Highlight Type:None
OBJ:        Cursor file:Default
OBJ:        Parameters:
OBJ:        Actions
OBJ:        1: Function closeflag := 0
OBJ:        2: Open File & Add to Retrace Path, File: TOPINT.LSF
obj:    #:17  Pos.:52,256  Width:228  Height:159  Type:Imag
OBJ:        Source:Clipboard
OBJ:        Save Palette:No  Fit Obj. To Image:Yes  Fit Image To Obj
OBJ:        Scaling & Horizontal:1.00  Vertical:1.00
```

Figure 1-19 Objects List

Variables List

The Variables List command lists the current value of variables.

Palette List

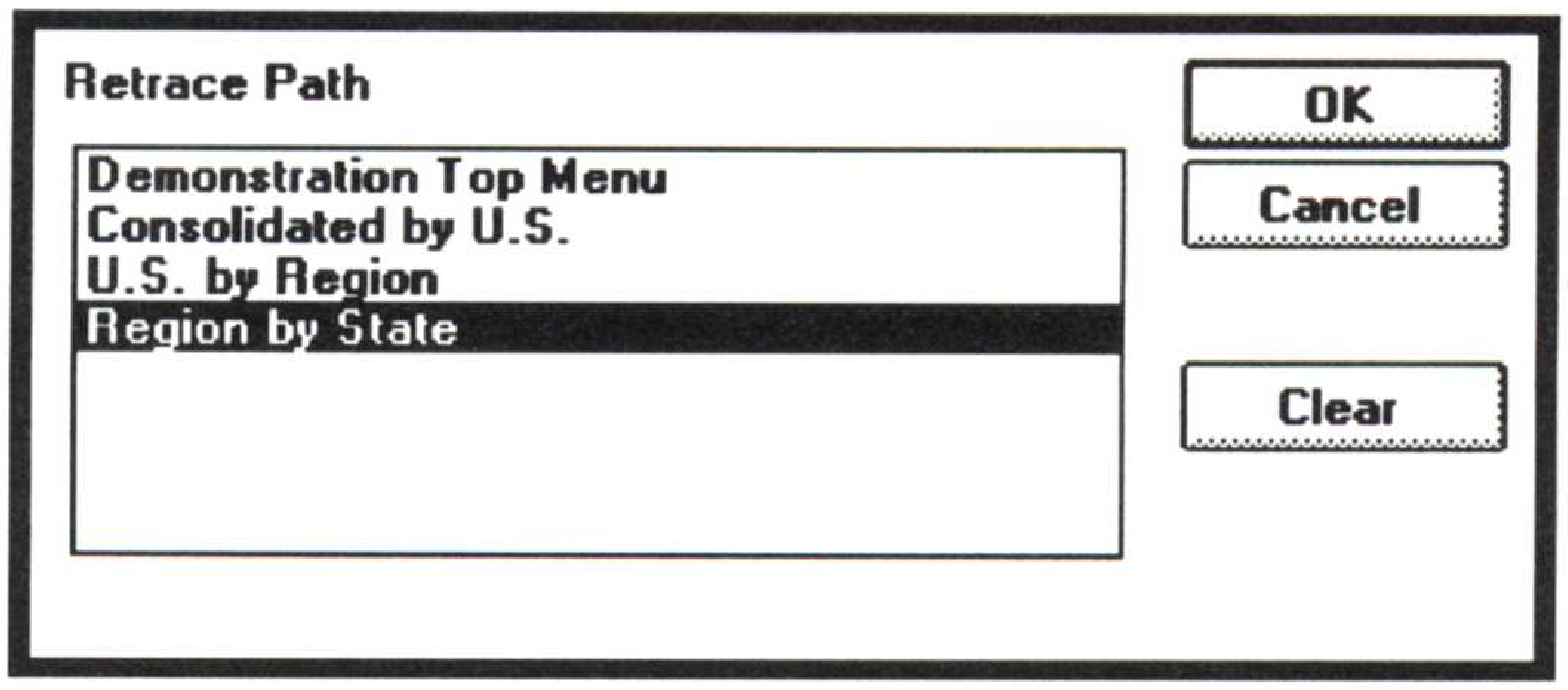
The Palette List command lists the currently used palette entries by their R (red), G (green), and B (blue) index numbers.

Retrace Path...

(F10)

The Retrace Path command displays the list of recently opened files that were not cleared or replaced in the path during this session. Use the Retrace Path dialog box to return to previously opened screens.

The Special Retrace Path also appears at the Browse and Capture levels if Options Hide Menu Bar is off. This command performs the same way at all levels.



Retrace Path

Demonstration Top Menu
Consolidated by U.S.
U.S. by Region
Region by State

Figure 1-20 Retrace Path Dialog Box

Retrace Path

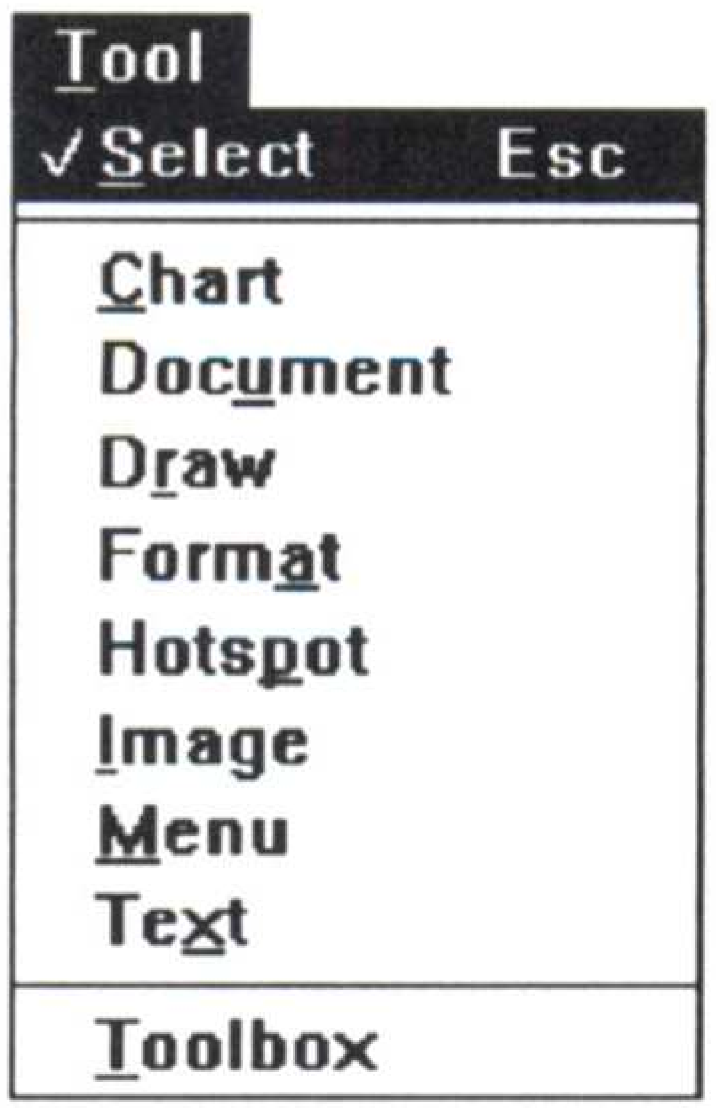
The Retrace Path box lists up to 32 filenames (or their window captions, if defined) that you opened in this session and did not clear or replace in the retrace path.

The screens appear in the order in which you opened them. Any file over the 32nd one is appended to the bottom of the list while the top one is deleted. This list also contains any temporary files saved from a *Save File - Temporary Name* action.

If you open a file from the Retrace Path dialog box, it is not added to the retrace path list again. Instead, LightShip rebuilds the retrace path list from this opened screen and clears all further screens from the retrace path list.

Clear

Clear erases all the files in the retrace path except the top (first) one.



Tool Menu

Use the Tool menu to create the objects and actions that make up your LightShip application. The Tool menu commands are described in Chapters 2 through 9 of this reference guide.

Alternatively, you can create objects with the Toolbox icons. The Toolbox appears when you choose the Toolbox command and lets you remain in Create mode.

Select

The Select command moves from Create mode to Select mode. Use Select to choose menu commands and select objects to move, resize, and change.

Chart

The Chart command lets you create a chart object and use the Chart menu. Use Chart to add a graphical display of document object data.

Document

The Document command lets you create a document object and use the Document menu. Use Document to display data from an ASCII text file, data that you enter manually, or data from an application that supports a DDE Request.

Draw

The Draw command lets you create a draw object and use the Draw menu. Use Draw to add rectangles, rounded rectangles, ellipses, polygons, and lines.

Format

The Format command lets you add a format object and use the Format menu. Use Format to format and align the numbers and text in a document object and color variances in data.

Hotspot

The Hotspot command lets you add a hotspot object and use the Hotspot menu. Use Hotspot to assign up to 20 parameters and perform up to 250 actions when you click on the object at the Browse and Capture levels.

Image

The Image command lets you add an image object and use the Image menu. Use Image to display images from these sources: the Clipboard; a file in PCX format; a file in BMP format; and an image from an application that supports a DDE Request.

Menu

The Menu command lets you add menu objects and use the Menu object menu. Use Menu to assign up to 20 parameters and perform up to 250 actions. You can create these types of menus:

- A menu that displays on the menu bar at the Browse and Capture levels with any number of menu items;
- A non-displayed event-driven menu;
- A non-displayed execute menu that is executed by other menus or hotspots.

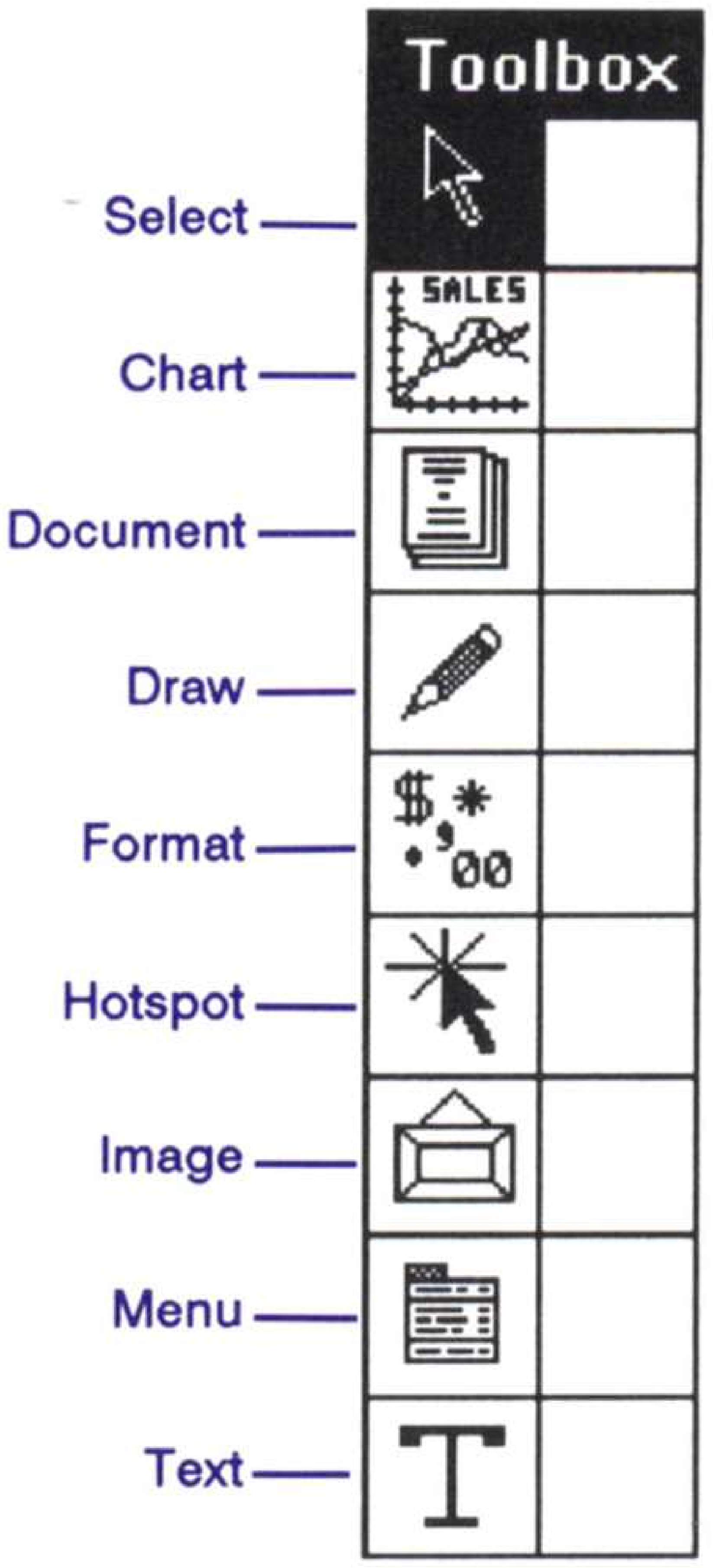
Text

The Text command lets you add a text object and use the Text menu. Use Text to display a line of information that you type into the object. You can change the text's alignment, color, and font.

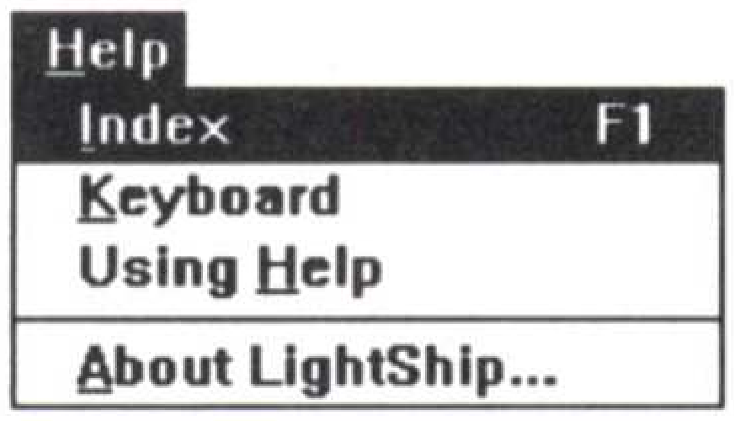
Toolbox

The Toolbox command displays LightShip's tools as icons. Use the Toolbox to create an object every time you click on an icon and to stay in Create mode during the session.

You can move the Toolbox and keep it open from session to session. To close the Toolbox, double-click on the Toolbox caption or turn off the Toolbox command.



Help Menu



Use the Help menu to display on-line information about:

- LightShip menus and commands
- Using the keyboard in LightShip
- The Help system
- The current version of LightShip

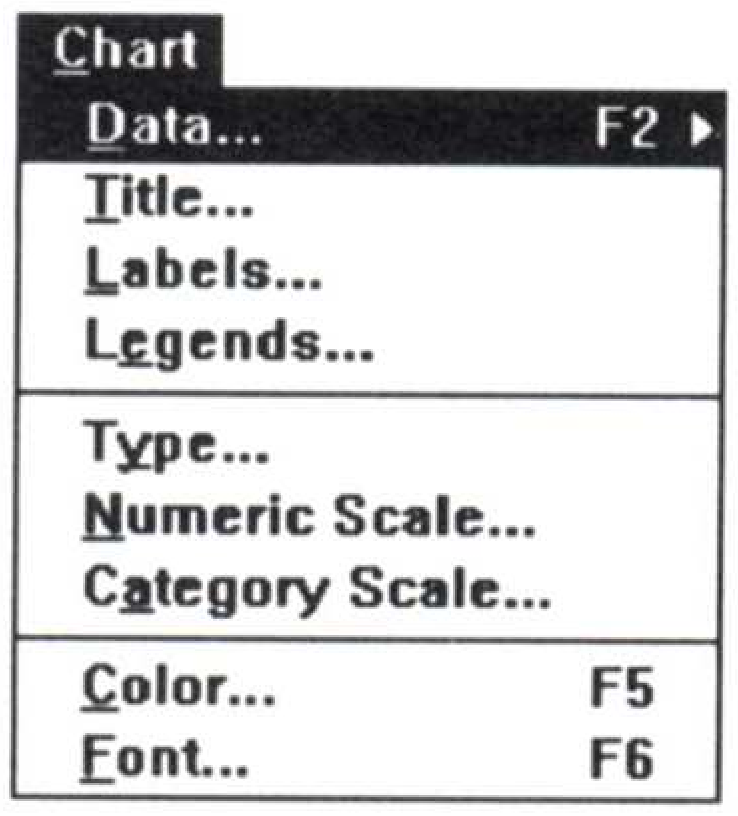
Choose any colored, underlined text to open the help screens.

***

Chapter 2

Chart Menu

The Chart Menu



Use the Chart menu to chart the data in document objects. You can add up to eight data series, a chart title, axis labels, and legends. You can change the chart scale, the chart type, colors, and fonts.

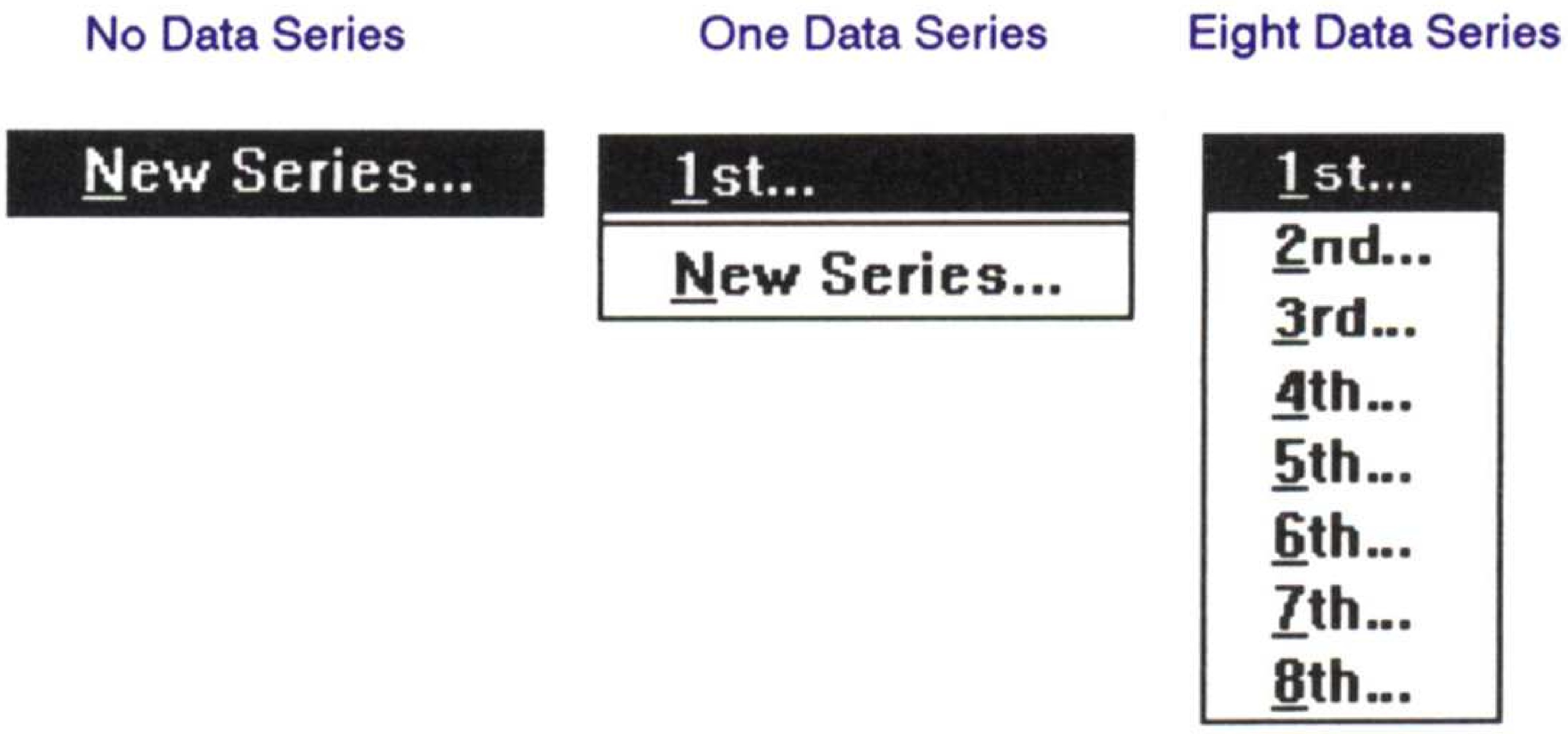
LightShip charts data by data series (a set of selected numbers). Each number in a data series is a data point on the chart.

Data... (F2)

The Data command displays a cascading menu with commands for selecting data to chart. This menu grows with each data series you select.

Initially, the menu has one command, New Series. When you choose New Series and select data for the first series, the menu adds a command, 1st. When you continue to select New Series, the menu grows until you select the maximum of eight data series.

Figure 2-1 shows how the menu appears with no data selected, one data series selected, and all eight data series selected.


No Data Series

One Data Series

Eight Data Series

Figure 2-1 Cascading Data Menus

New Series...

The New Series command specifies the new data series to chart. This command opens the Point mode screen in which you point to data for the new data series. As the menu grows, continue selecting New Series to chart up to eight data series. You can select data in columns and individually.

1st...8th

The 1st command through the 8th command represent the number of data series you have charted. Choose a command to open the Point mode screen and change the data for that series. If you delete a data series, all subsequent data series move up in number. For example, if you delete the 3rd data series, the 4th data series becomes the 3rd data series.

Title...

The Title command adds a chart title that is centered at the top of the chart, as shown in Figure 2-2. This command opens the Point mode screen in which you select the title text from a document object.

Labels...

The Labels command adds labels at data points on the category axis, as shown in Figure 2-2. This command opens the Point mode screen in which you select category labels from documents individually or in columns.

Category labels display under each data point on the category axis, in the order that you select them. If you select fewer labels than the number of data points, the extra data points remain unlabelled. If you select more labels than the number of data points, LightShip displays a label on each data point and omits the extra labels.

Use the Category Scale command to change the labels' starting point, frequency, and order of display.

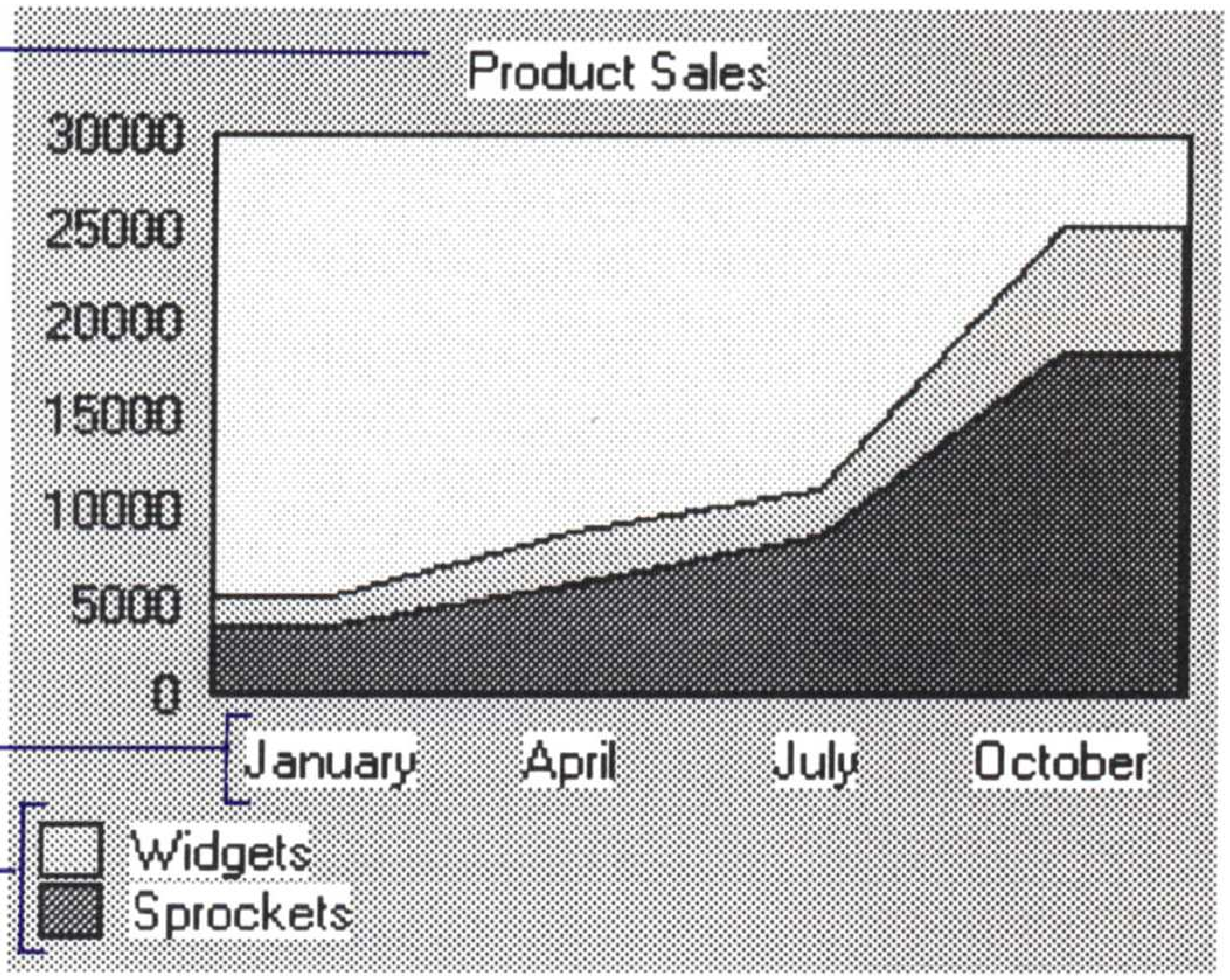


Chart Title

Chart Labels

Chart Legend

Figure 2-2 Chart Title, Labels, and Legend

Legends...

The Legends command adds legends that identify each data series being charted, as shown in Figure 2-2. This command opens the Point mode screen where you select the legends from document objects.

Select as many legends as there are data series, so that each legend box has an appropriate label. You can select a blank space to skip the legend display for a particular data series.

The legend appears in a single column in the lower left corner of the chart. Each data series is represented by a box that is the same color as the data it identifies.

The first legend you select appears to the right of the first data series legend box. If you outline a data series using the Chart Color command, all the legend boxes are outlined.

Type...

The Type command specifies the chart types for the chart's data series. Use the Chart Type dialog box to select the chart types. Certain options are unavailable for some chart types. Dimmed data series options mean that you have not selected data for them.

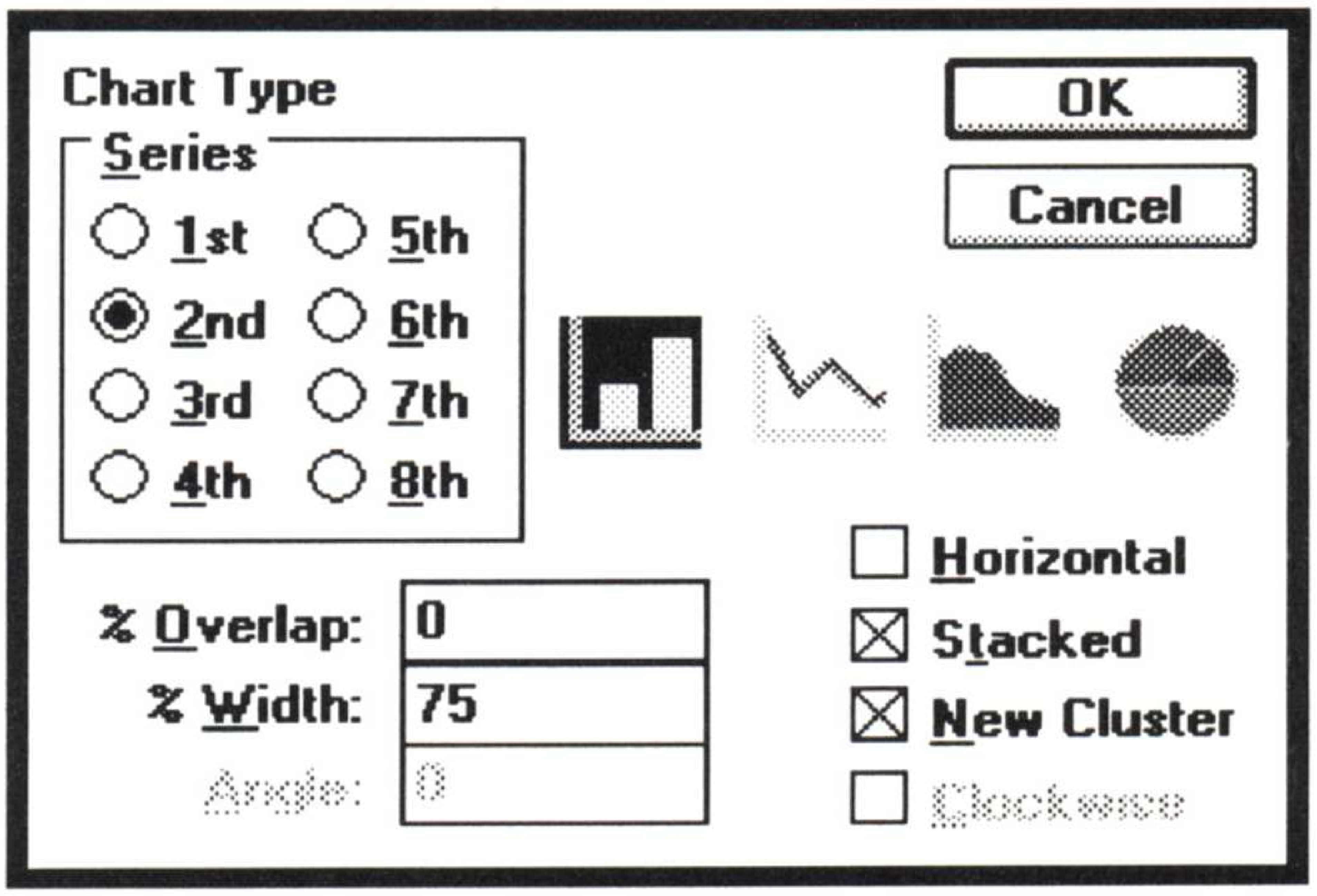


Chart Type

Series

○ 1st ○ 5th
● 2nd ○ 6th
○ 3rd ○ 7th
○ 4th ○ 8th

% Overlap: 0
% Width: 75
Angle: 0

☐ Horizontal
☒ Stacked
☒ New Cluster
☐ Clockwise

Figure 2-3 Chart Type Dialog Box

1st ... 8th

The numbered option specifies the data series to be affected by any options and text box entries that you change. You can select any data series option that contains data.

Bar

The Bar option changes the data series to display as bars on a chart. Initially, LightShip draws all data series as bars, which are rectangles drawn from the crosses line to the data point.

If more than one data series is a bar type, the bars are drawn side-by-side at each data point. These bars are in the same cluster.

Use the following options on a bar chart:

- % Overlap overlaps bars at data points. Multiple bars in a cluster have the same overlap.
- % Width modifies a bar's width on a data point. Multiple bars in a cluster have the same width.
- New Cluster begins a new cluster of bars, drawn in front of the previous bar data series. Bars in new clusters can have a different width and overlap from the previous cluster.
- Stacked draws this bar data series on top of the previous bar data series.

Line

The Line option changes the data series to display as a line on a chart. LightShip draws a continuous line through the data points in the data series.

If you select a blank data point, the line stops there and then begins again at the next point.

Use the following options on a line chart:

- % Flat flattens a line's data points.
- % Width changes a line's width.
- Stacked draws this line on top of the previous line series.

Area

The Area option changes the data series to an area. LightShip draws a solid area from the crosses line to the data points.

Use these options on an area chart:

- % Flat flattens an area's data points.
- % Width changes the width of an area.

Pie

The Pie option changes the data series to display as a pie chart. LightShip draws the data points of one data series as wedges in a circle. If you select another data series, LightShip draws a second pie on top of the first one.

Use these options on a pie chart:

- % Width changes the width of a pie chart. You must use smaller widths for additional pie data series to be able to see each one.
- Angle changes the angle at which the first data point's wedge begins. By default, it is drawn at 0 degrees (3 o'clock).
- Clockwise changes the direction that the wedges are drawn. By default, pies are drawn counterclockwise.

% Overlap

The % Overlap box specifies the percent, between 0 and 100, to overlap bars. This option is available only when you select a bar type. Otherwise, it becomes the % Flat option, or it is dimmed.

Use % Overlap to overlap:

- Same-clustered bars by the amount specified for the first data series
- New-clustered bars by varied amounts
- Stacked bars

Figure 2-4 shows a same-clustered bar chart with 0% overlap on the left and 50% overlap on the right.

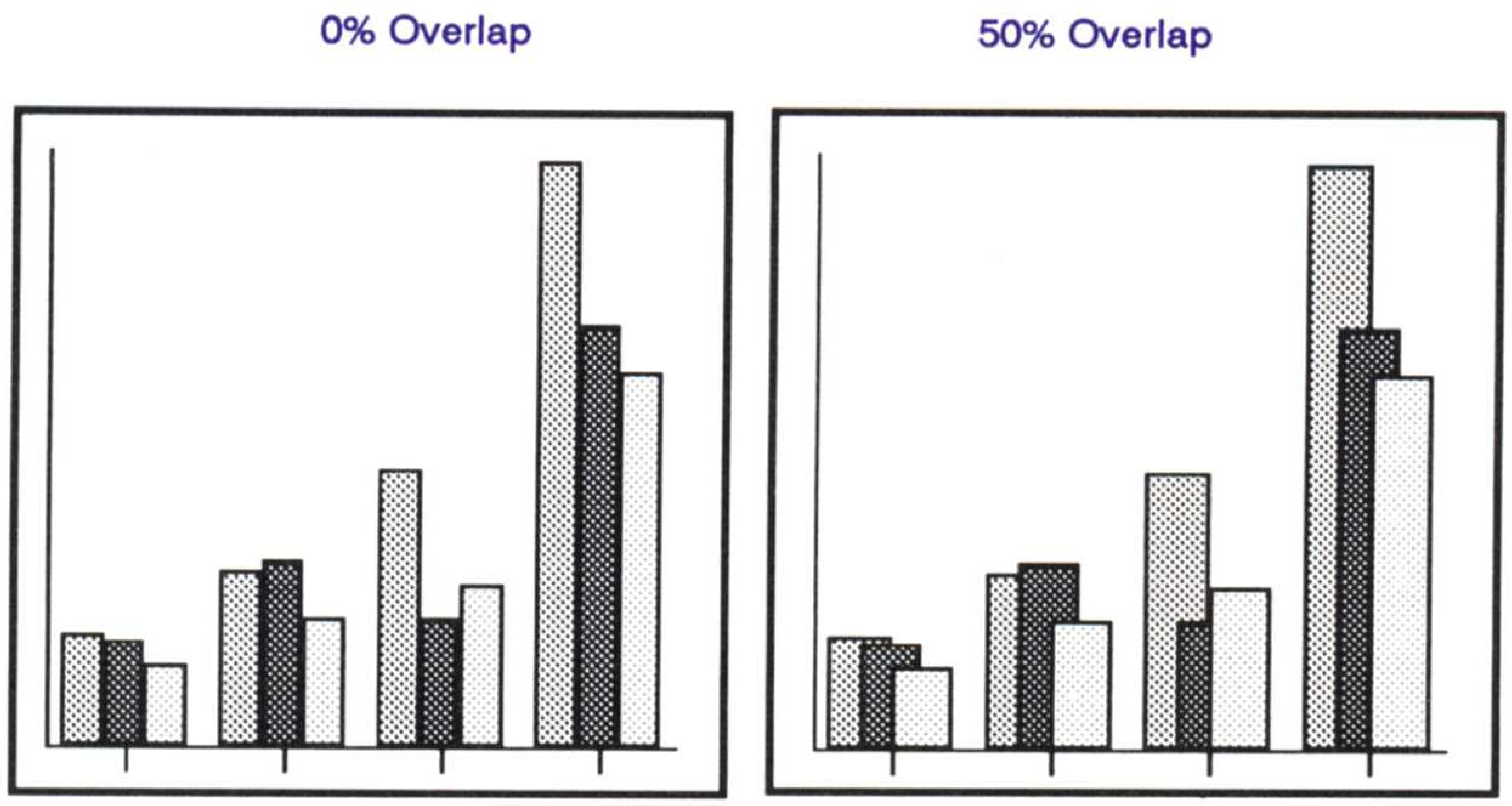


Figure 2-4 Overlapping Bars

% Flat

The % Flat box specifies the percent, between 0 and 100, to flatten lines and areas on data points. This option is available when you select a line or area type. Otherwise, it becomes the % Overlap option, or it is dimmed.

Figure 2-5 displays area charts with 0%, 50%, and 100% settings of % Flat.

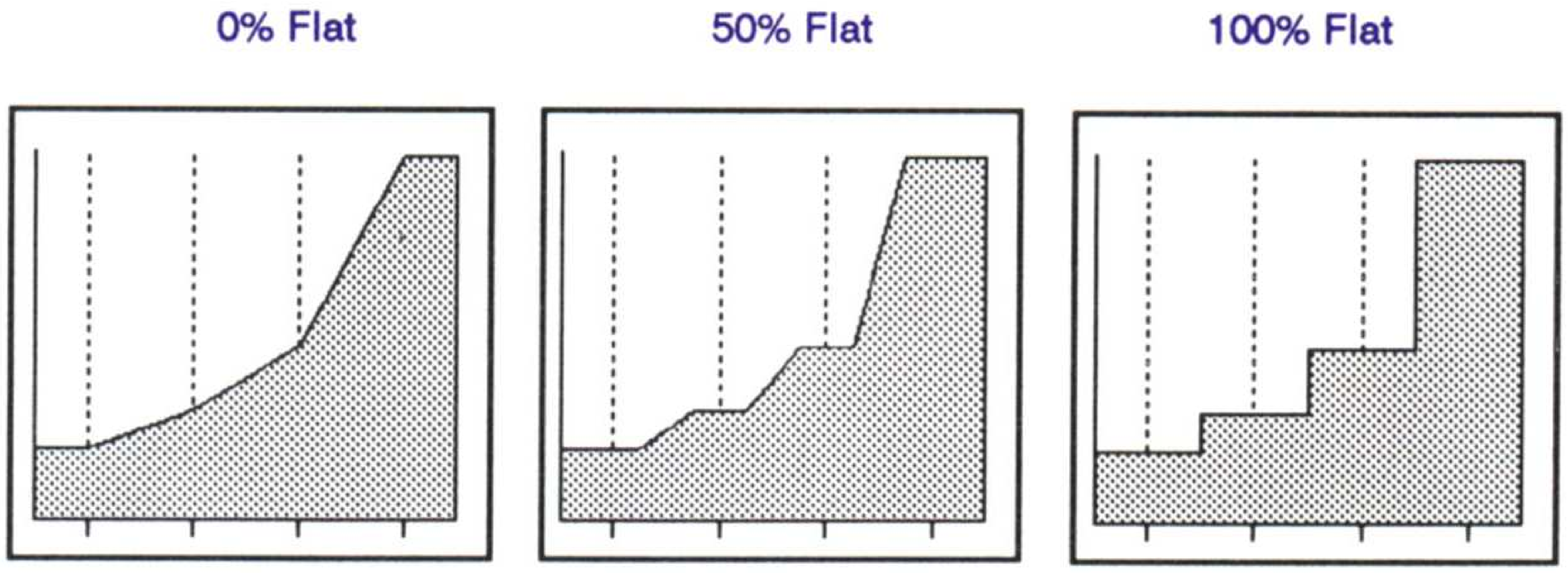


Figure 2-5 % Flat for Area Charts

Figure 2-6 displays line charts with 0%, 50%, and 100% flatness.

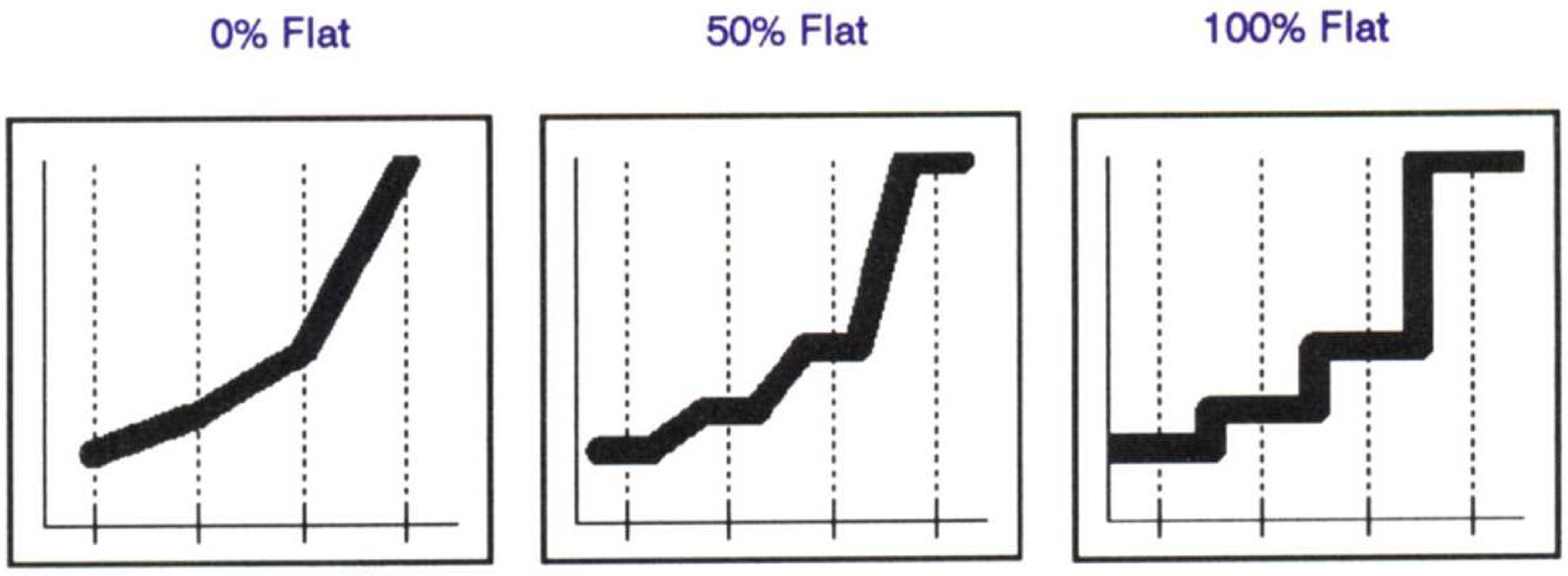


Figure 2-6 % Flat for Line Charts

% Width

The % Width box specifies the percent, between 0 and 100, to change the width of the selected bar, line, pie, or area.

For bars that are in the same cluster, the first data series controls the width for the following bar data series. You can increase or decrease all bars equally. A maximum width of 100 leaves no space between bars. A width of 50 makes bars 50% narrower, leaving space in between the data series.

For bars in a new cluster, you can specify a different width for each data series' bars.

Figure 2-7 shows two same-clustered bar charts with equal widths and a new-clustered bar chart with varying widths.

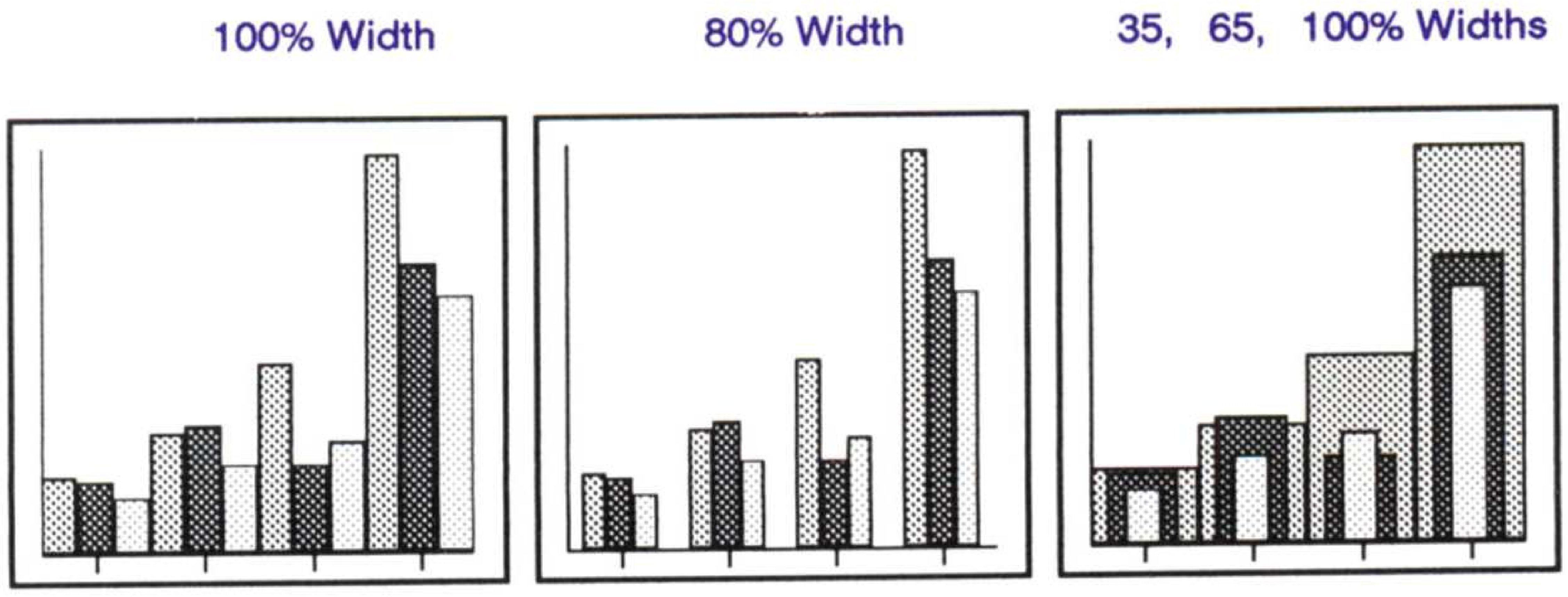


Figure 2-7 Varied Bar Widths

Figure 2-8 shows three line charts with varying line widths.

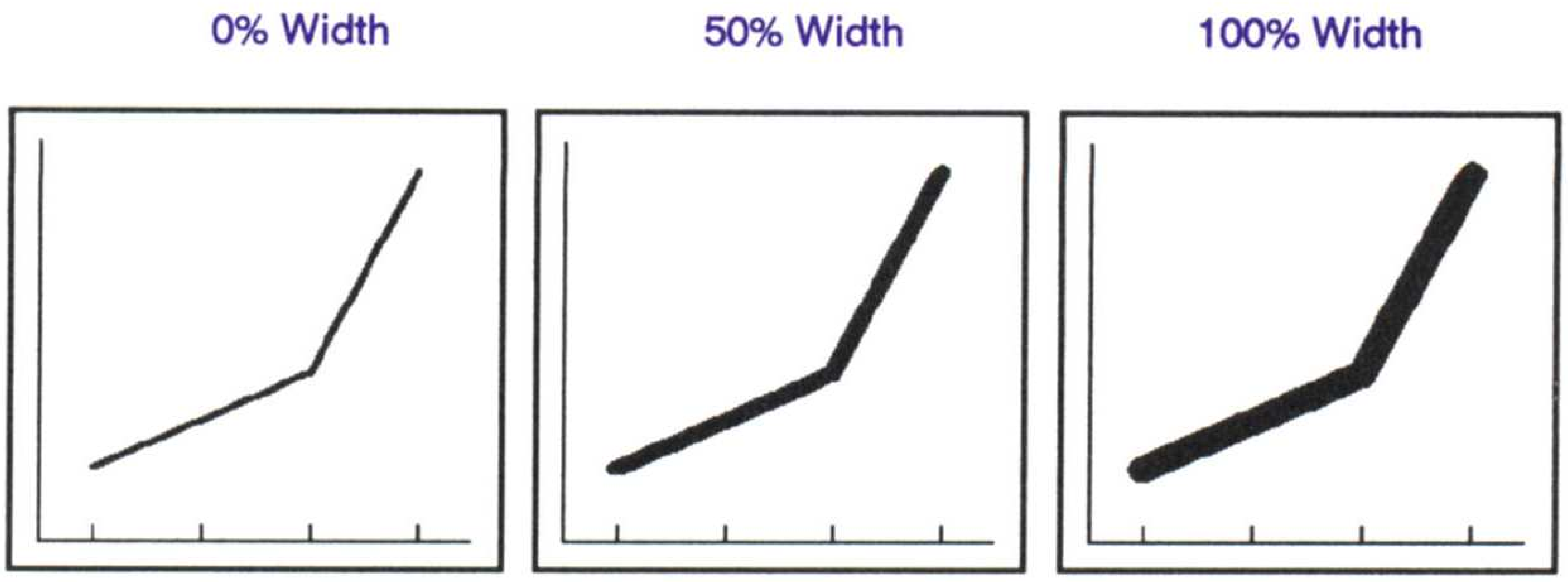


Figure 2-8 Varied Line Widths

Area widths increase or decrease the space before the first data point and after the last data point as shown in Figure 2-9.

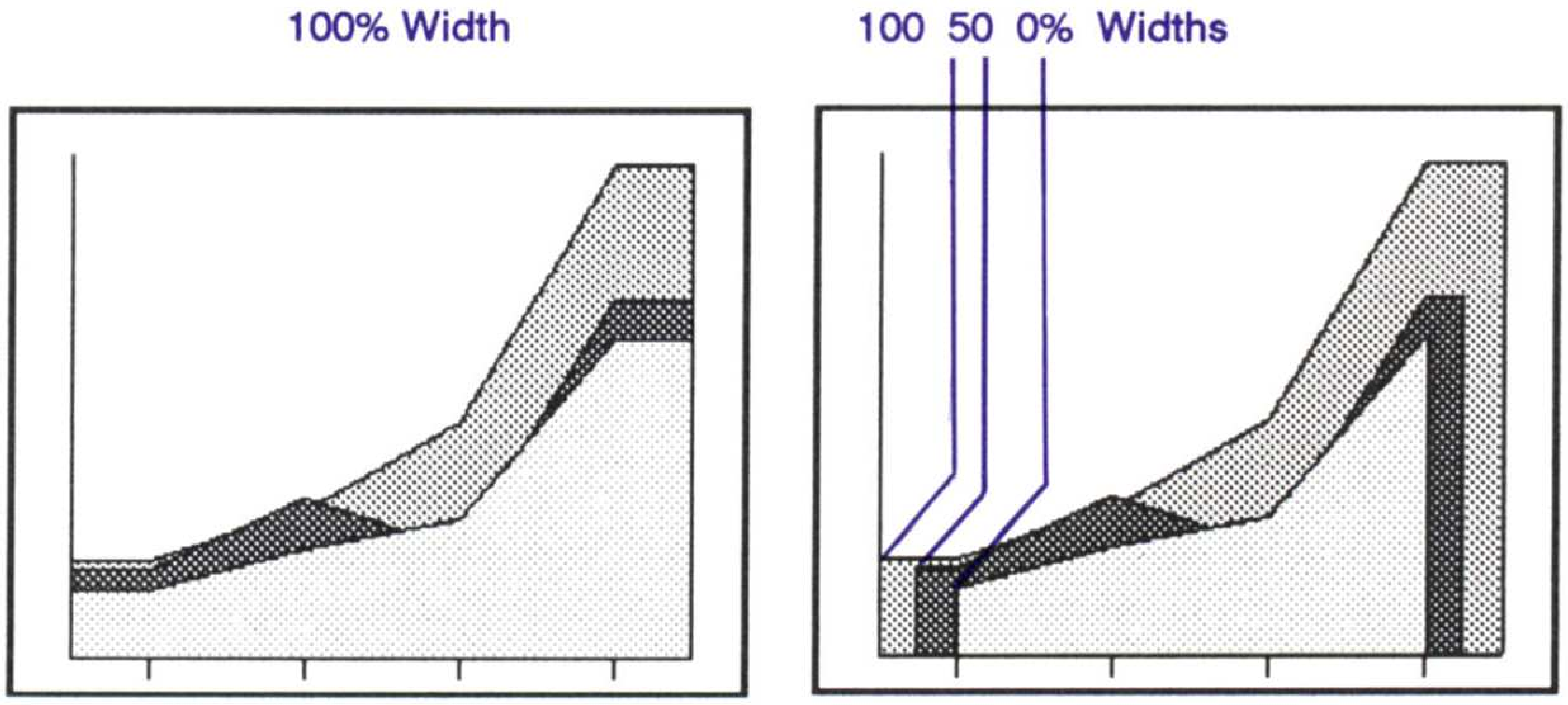


Figure 2-9 Varied Area Widths

Figure 2-10 shows three pie data series with varying widths.

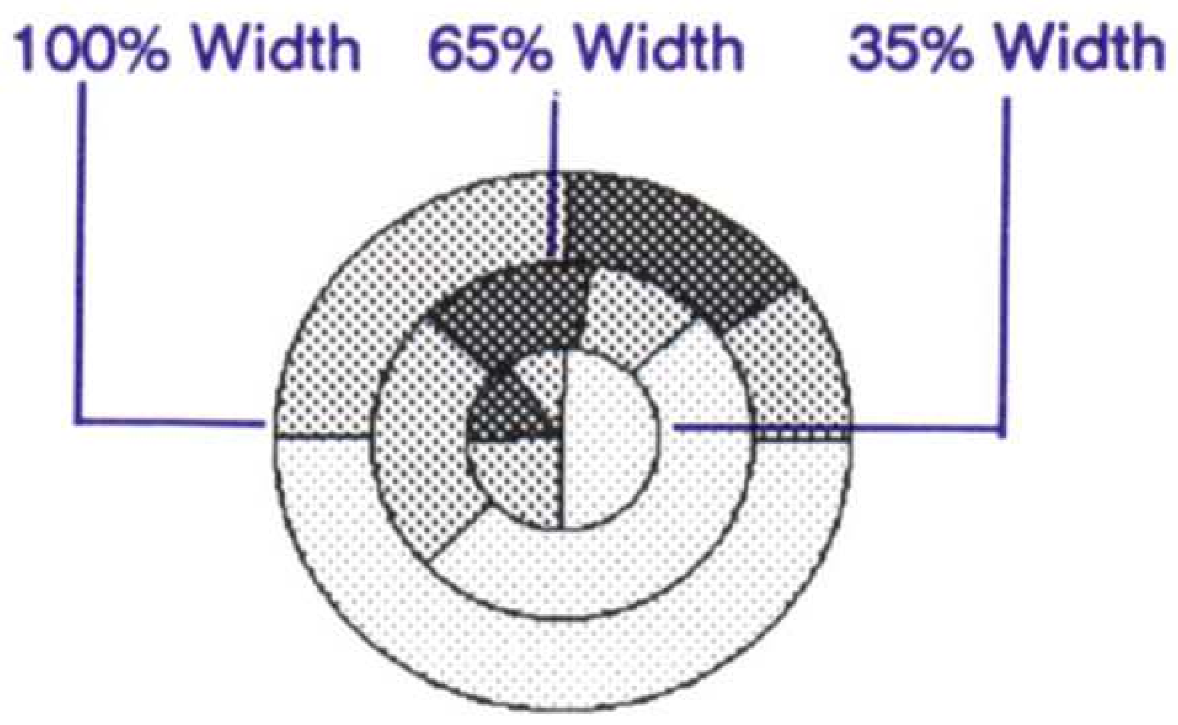


Figure 2-10 Varied Pie Widths

You must decrease the width of subsequent data series so that all pies are displayed.

Angle

The Angle box specifies the degree, between 0 and 359, to draw the pie's first wedge. 0 degrees, the default, draws the first data point at 3 o'clock; 180 degrees draws it at 9 o'clock.

Figure 2-11 shows the same pie chart drawn at 0 degrees and then at 270 degrees.

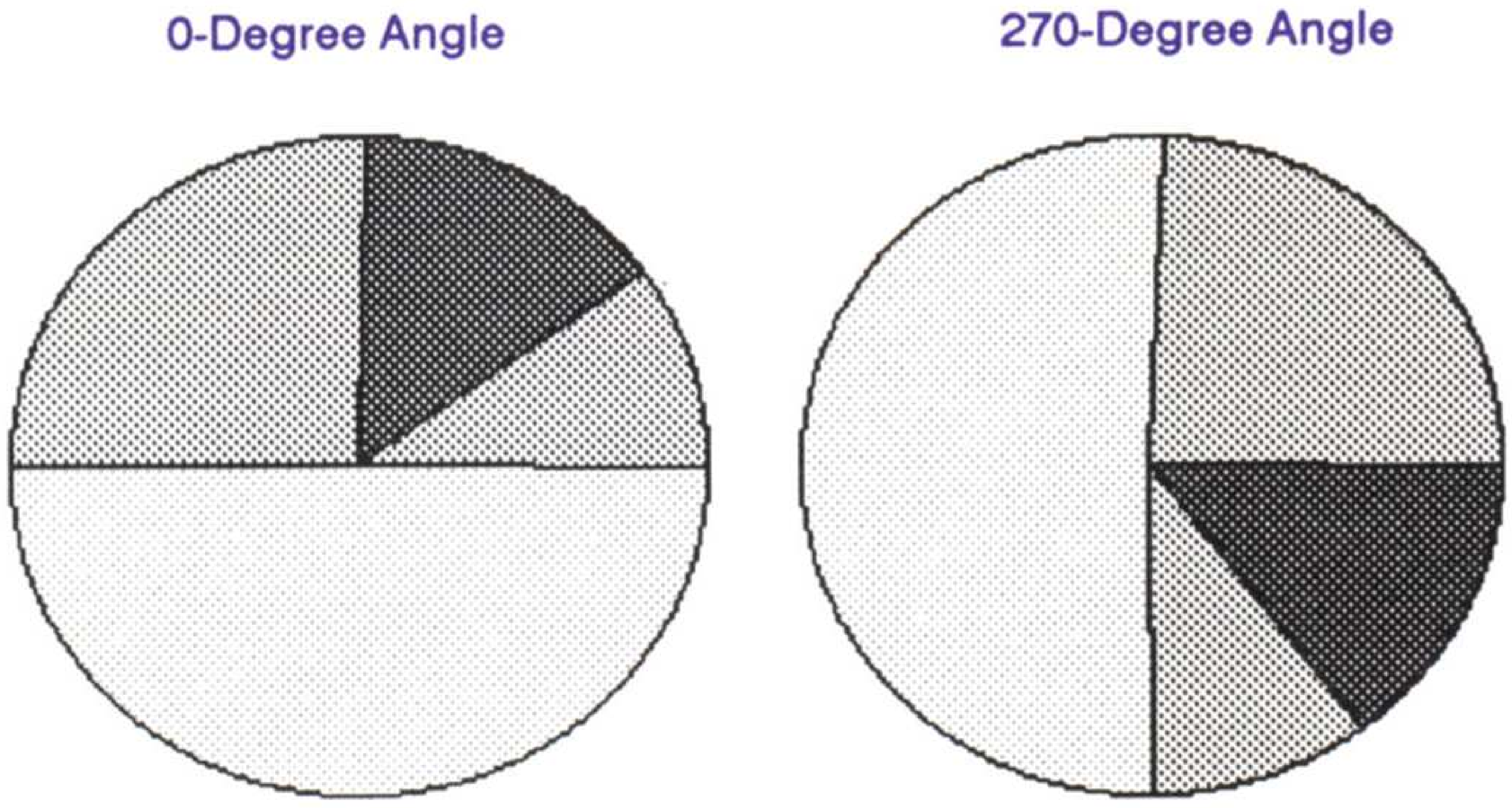


Figure 2-11 Pie Angles

Horizontal

The Horizontal option changes the orientation of the chart from vertical to horizontal. Figure 2-12 shows a default chart on the left and a horizontal chart on the right.

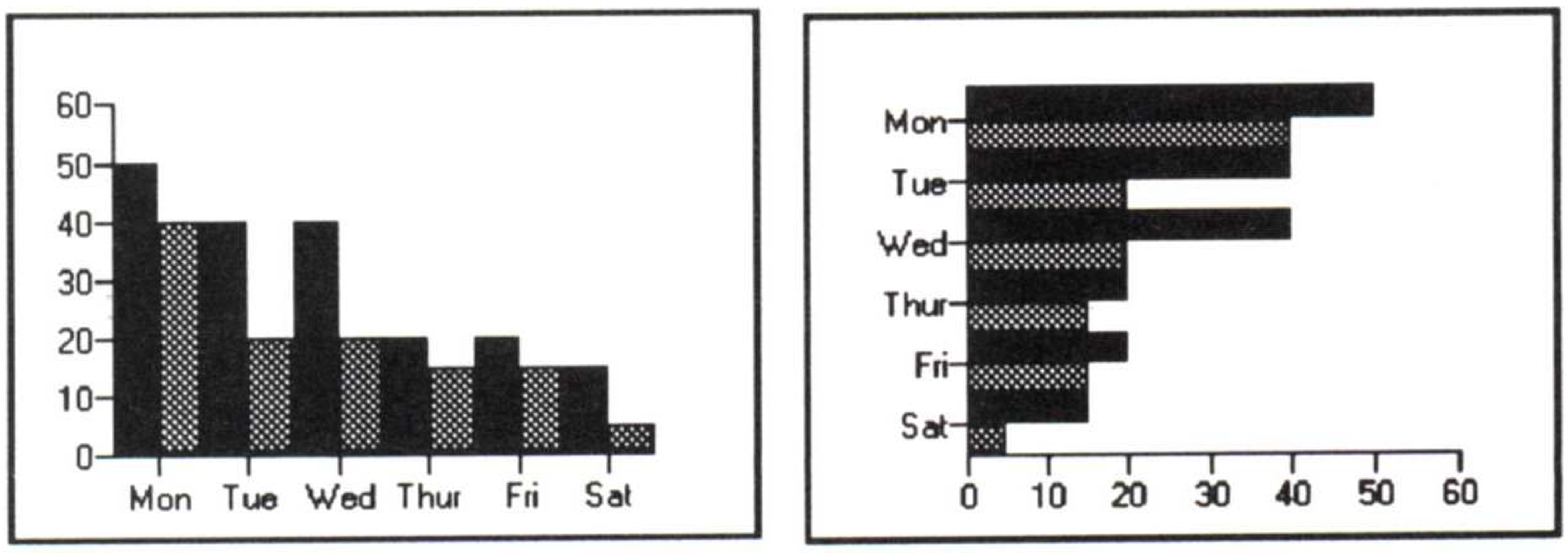


Figure 2-12 The Horizontal Option

New Cluster

The New Cluster option removes the current data series' bars from the previous cluster. This data series' bars are drawn in front of the previous data series, instead of to the right.

A new-clustered bar can have a different width from the previous bar and can be stacked on top of the previous bar.

Figure 2-13 uses the same data to show a same-clustered bar chart on the left and a new-clustered bar chart on the right.

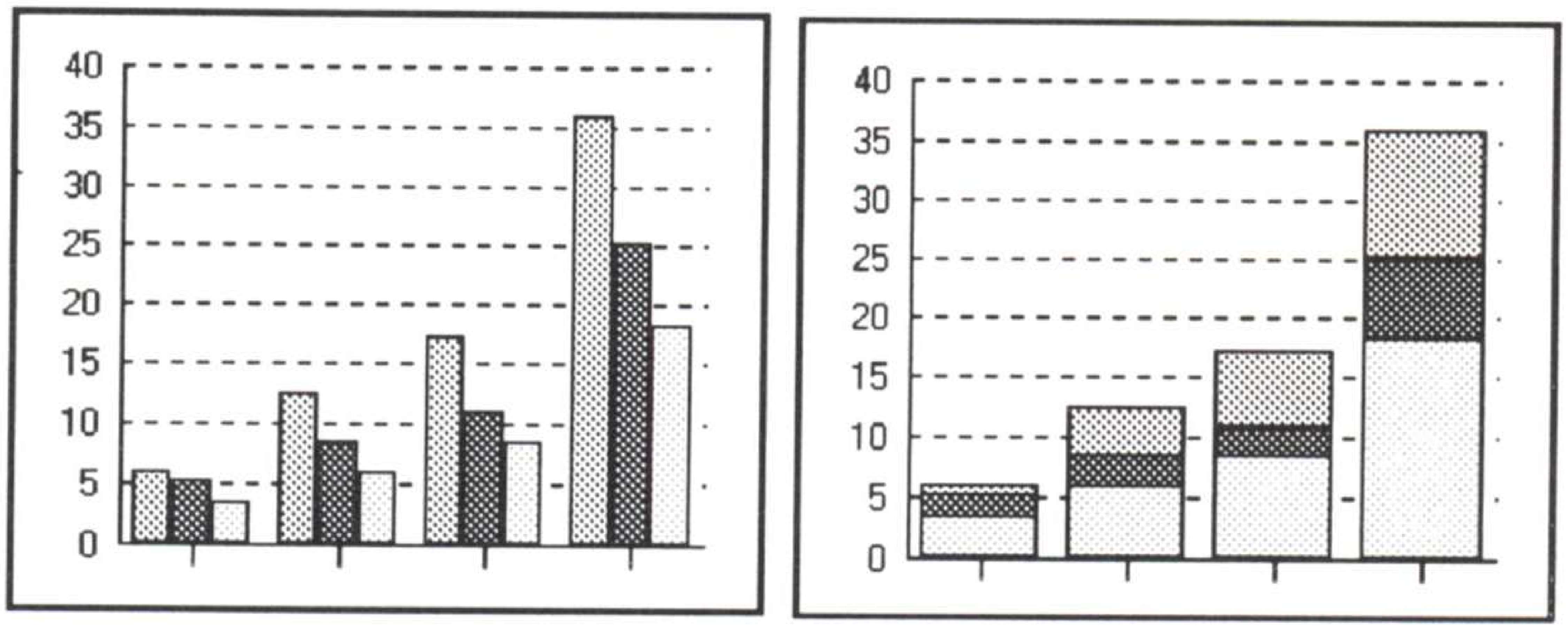


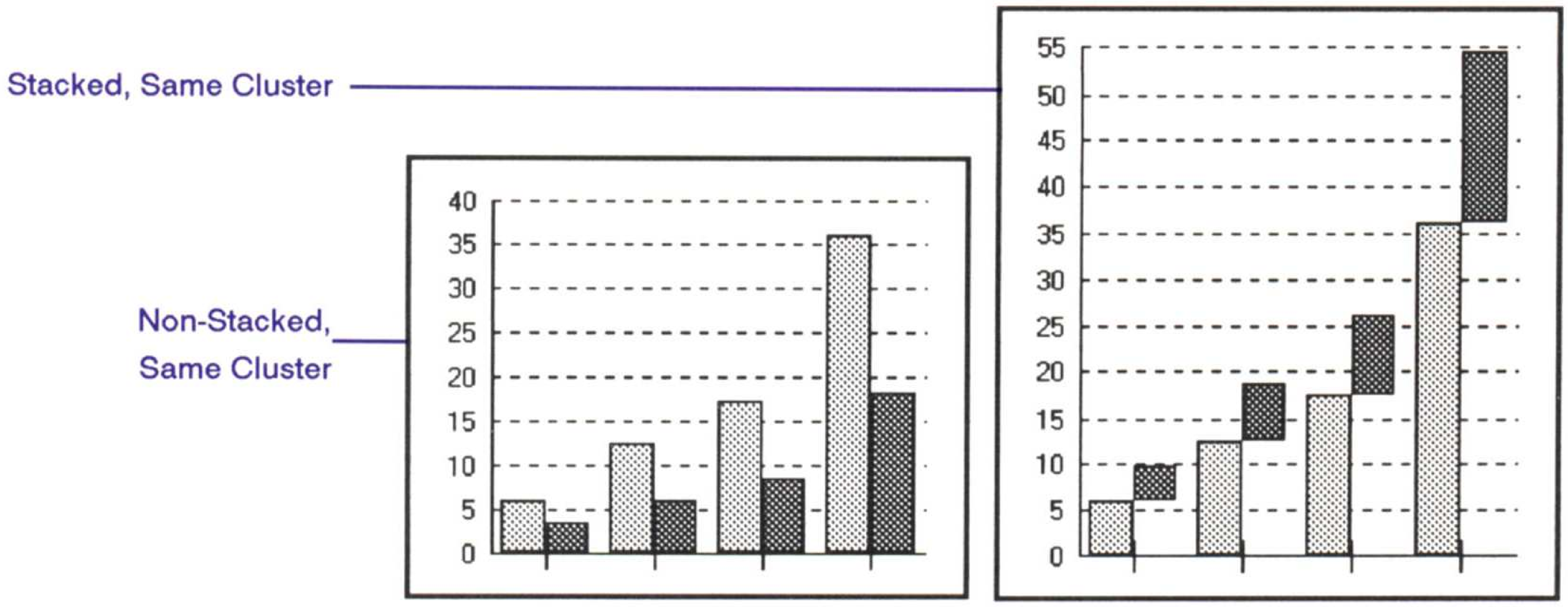
Figure 2-13 Same Clusters and New Clusters

Stacked

The Stacked option charts a bar or line data series above the previous data series instead of on the crosses line. This shows multiple data points as parts of a total amount.

Stacked data points begin where the previous data points end. Lines and new-clustered bars are stacked above the previous data series' data points. Same-clustered bars are stacked above and to the right of the previous bar's data points.

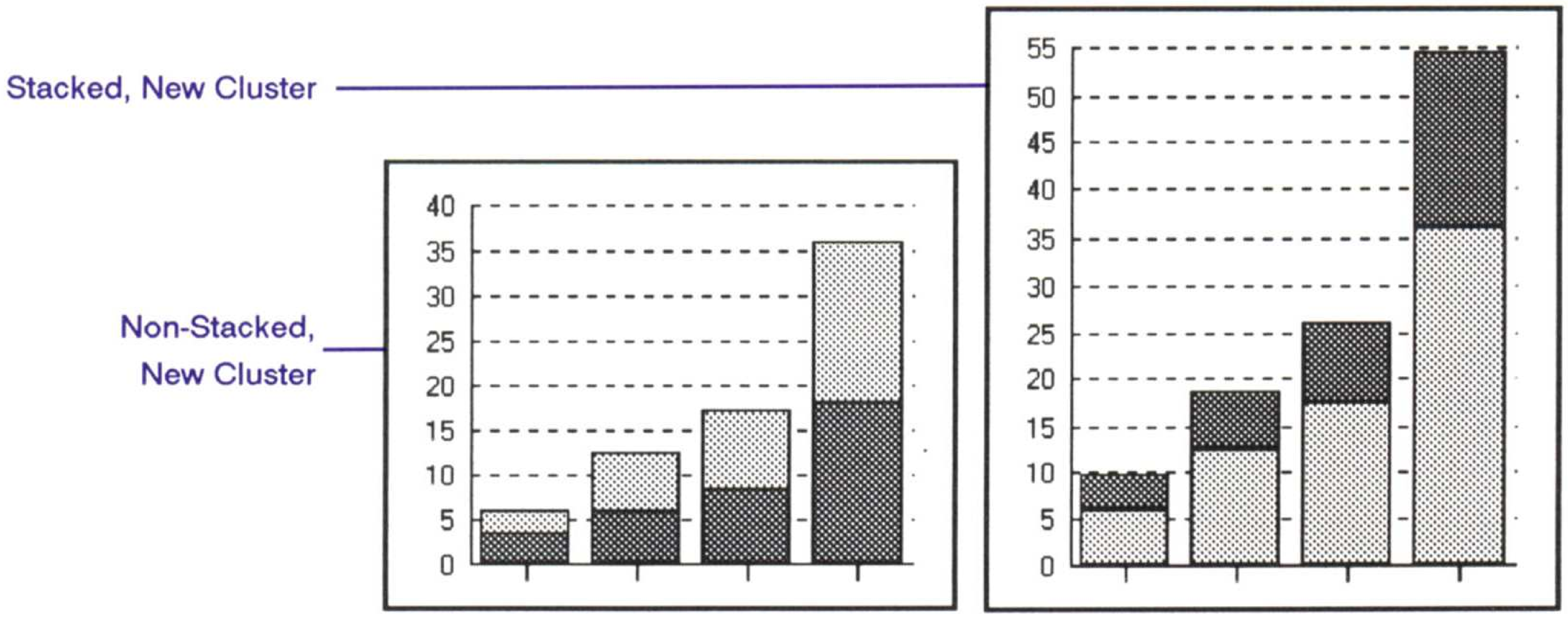
Figure 2-14 uses the same data to show a non-stacked, same-clustered bar chart on the left and a stacked, same-clustered bar chart on the right.


Stacked, Same Cluster

Non-Stacked, Same Cluster

Figure 2-14 Non-Stacked and Stacked Bars in the Same Cluster

Figure 2-15 shows a non-stacked, new-clustered bar chart on the left and a stacked, new-clustered bar chart on the right. It uses the same data as shown in Figure 2-14.


Stacked, New Cluster

Non-Stacked, New Cluster

Figure 2-15 Non-Stacked and Stacked Bars in a New Cluster

Figure 2-16 shows a line chart on the left and a stacked line chart on the right.

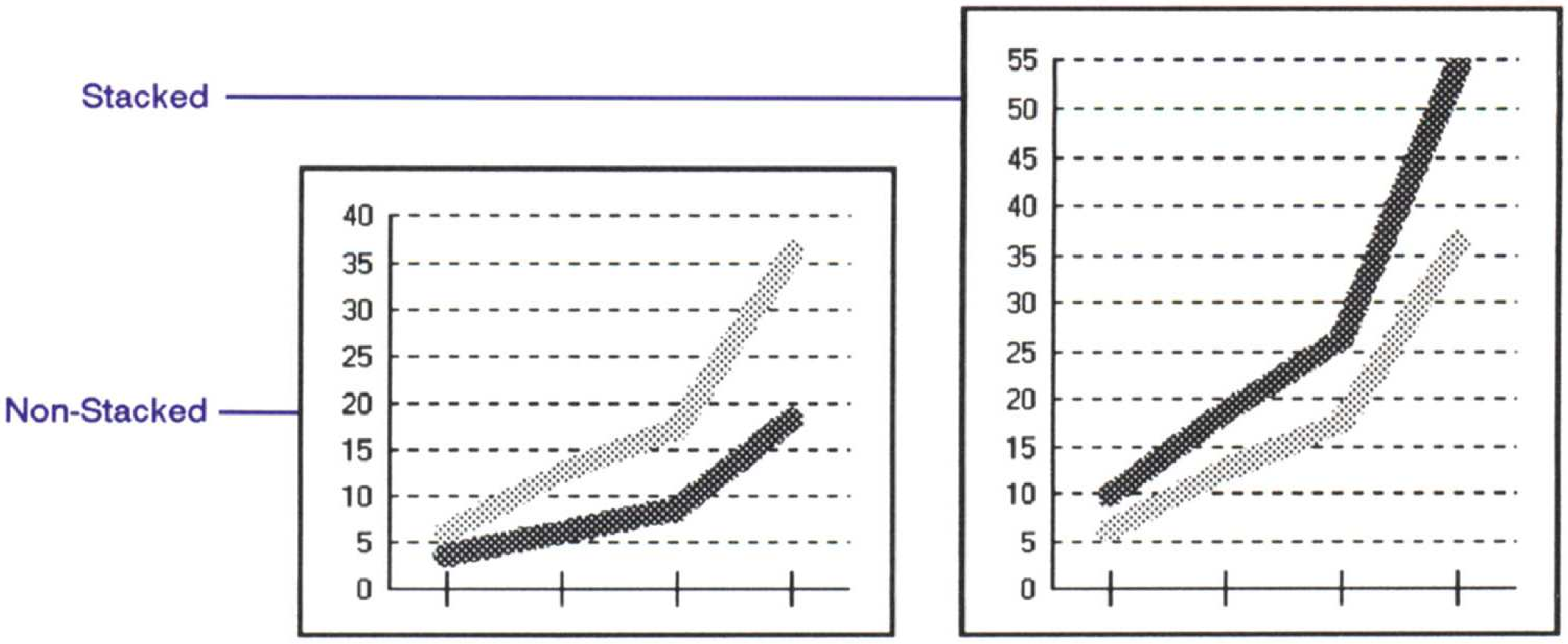


Figure 2-16 Non-Stacked and Stacked Lines

Clockwise

The Clockwise option changes the direction of the pie chart from counterclockwise to clockwise. Figure 2-17 shows a default pie chart on the left and a pie chart drawn clockwise on the right.

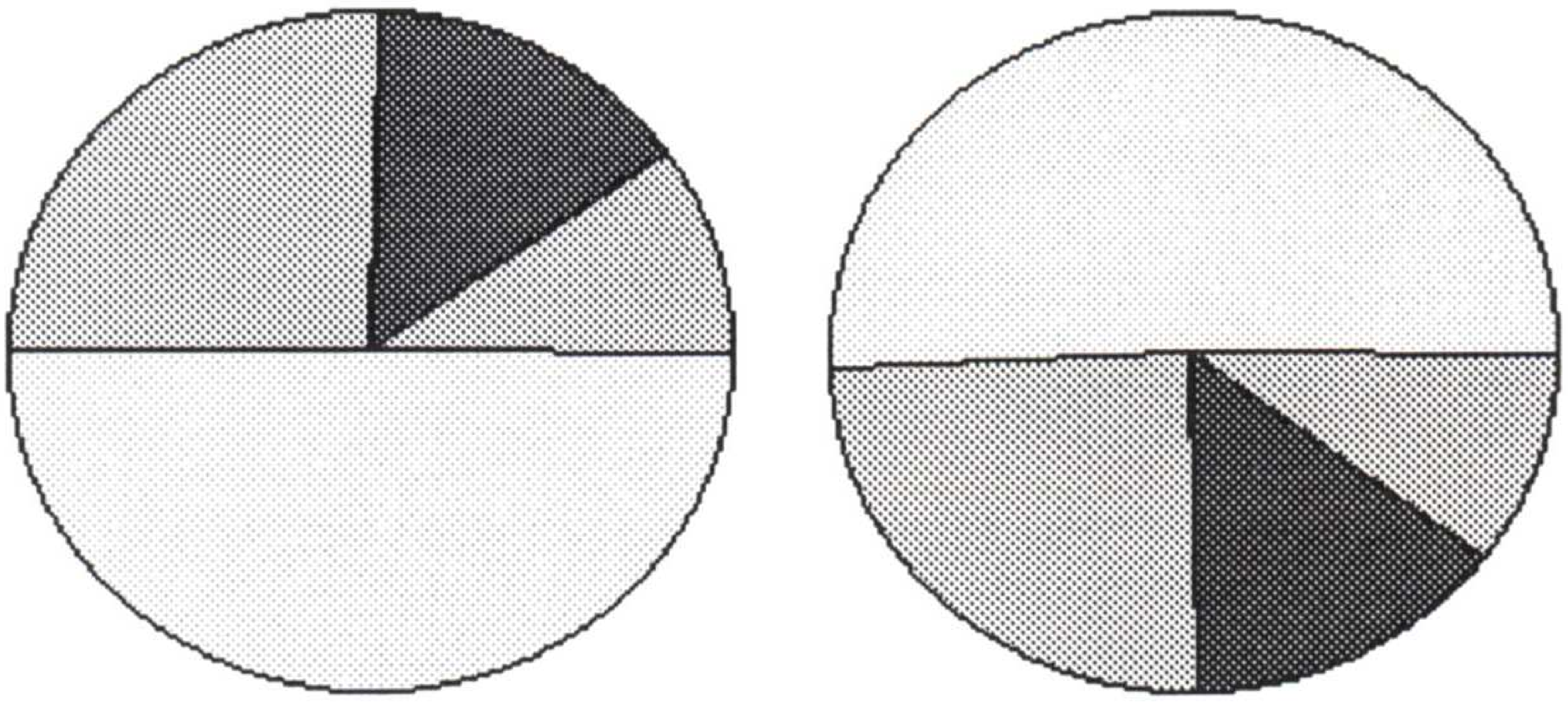


Figure 2-17 Counterclockwise and Clockwise Pie

Numeric Scale...

The Numeric Scale command specifies a chart's numeric scale. Use the Chart Numeric Scale dialog box to change the numeric scale or let LightShip calculate an automatic numeric scale.

If a numeric item does not display on the chart after you select a numeric scale value, the item is colored Invisible. Use the Color command to change the color of numeric items.

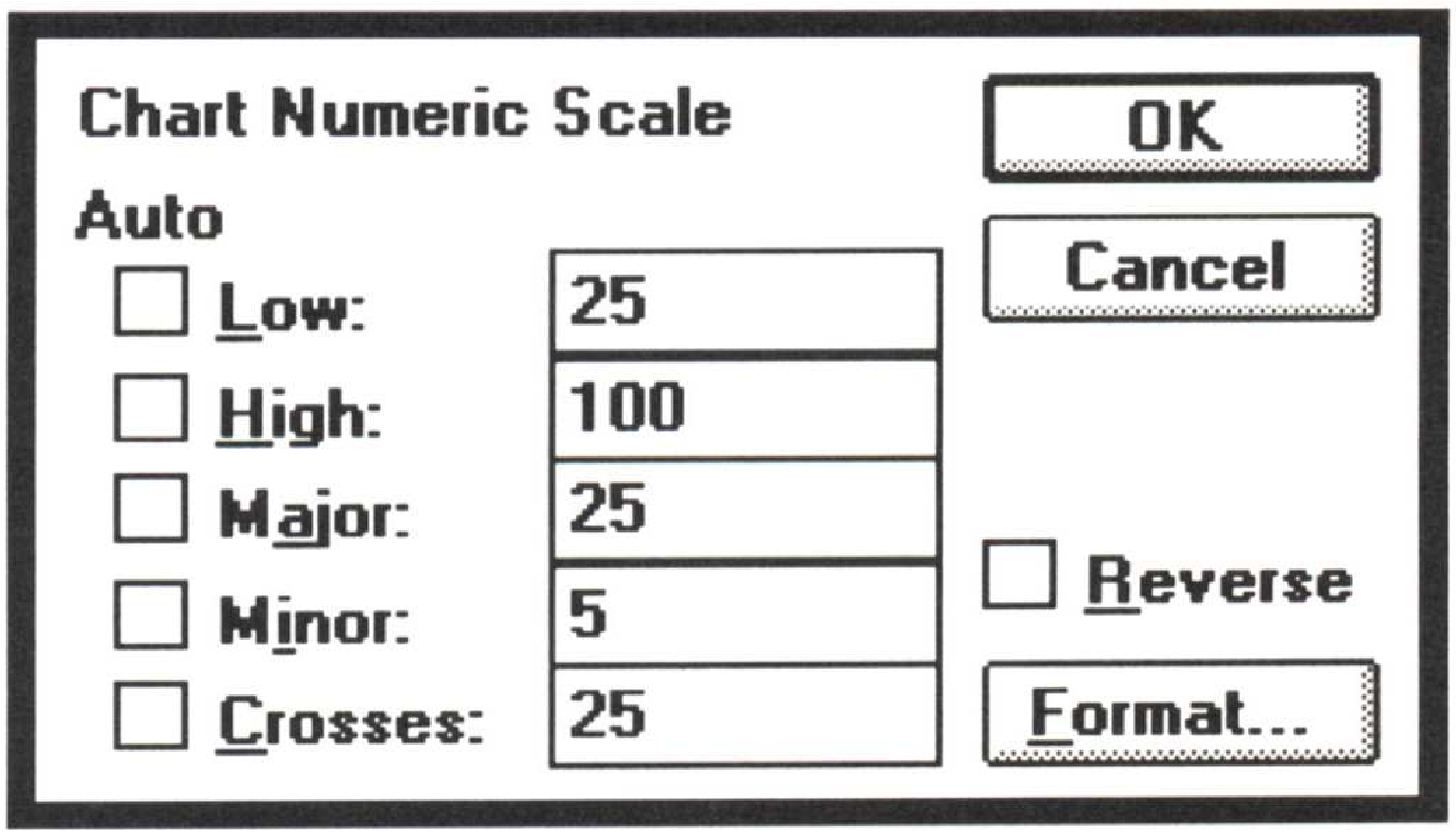


Chart Numeric Scale

Auto

☐ Low: 25

☐ High: 100

☐ Major: 25

☐ Minor: 5

☐ Crosses: 25

☐ Reverse

Figure 2-18 Chart Numeric Scale Dialog Box

Auto

The Auto options automatically assign values for the numeric scale based on the data. You can turn on Auto for any numeric scale option. Auto dims the text box of the selected option so that you cannot type any data.

Low

The Low box specifies the lowest value to chart data. If data exists below the low value, it is not displayed on the chart.

High

The High box specifies the highest value to chart data. If data exists greater than the high value, it is not displayed.

Major

The Major box specifies the interval of numeric labels, major inside and outside ticks, and major grid lines.

Figure 2-19 displays a chart using a major interval of 40. This chart shows numeric labels, major outside ticks, and major grid lines at every 40 points on the numeric axis.

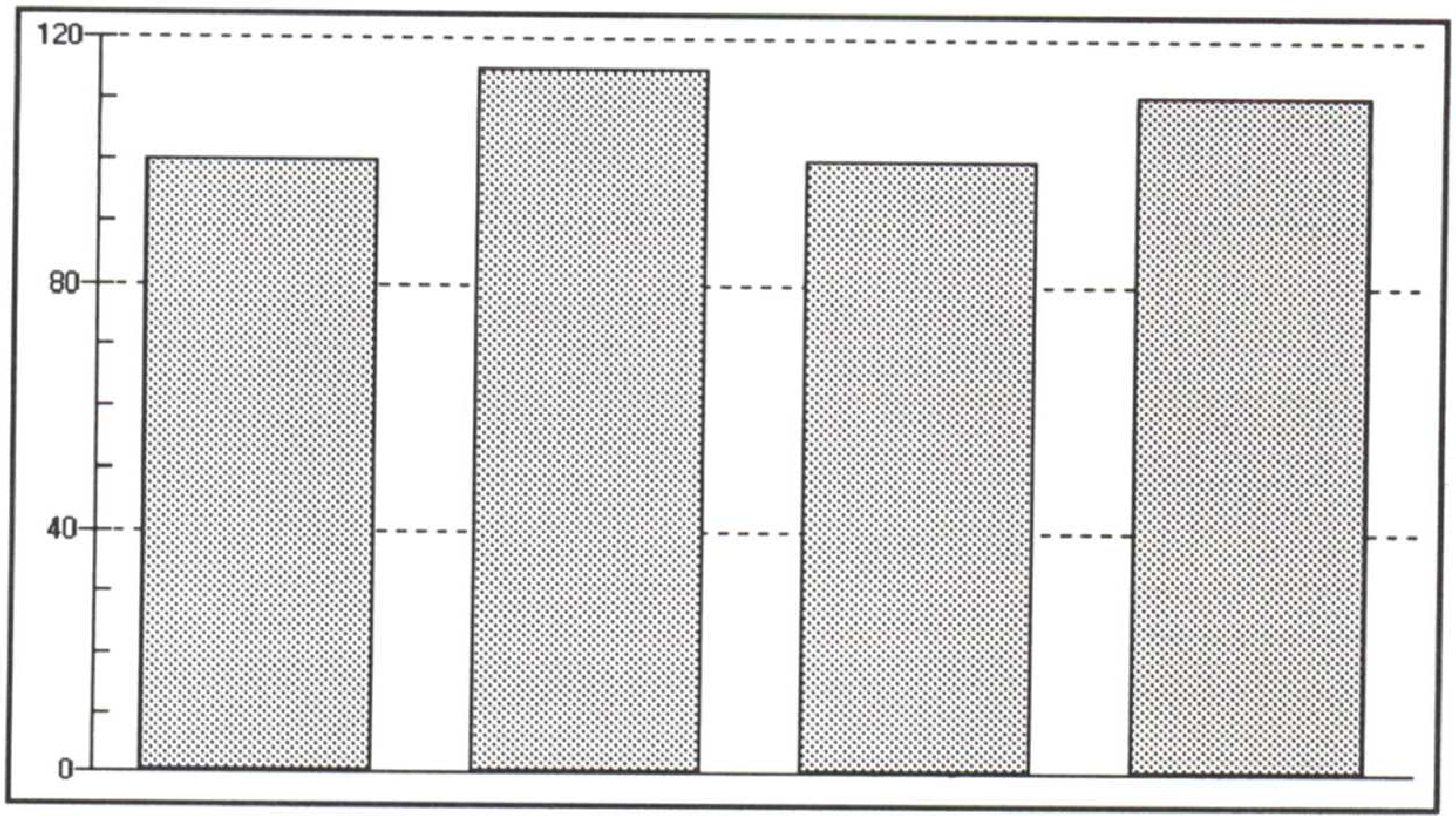


Figure 2-19 Major and Minor Marks

Minor

The Minor box specifies the interval of minor inside and outside ticks and minor grid lines.

Figure 2-19 displays a chart using a minor interval of 10. This chart shows minor inside ticks at every 10 points on the numeric axis.

Crosses

The Crosses box specifies the baseline point from which to chart data. Numbers greater than the crosses line are charted above it; numbers less than the crosses line are charted below it.

If your data has negative values, you may want to chart a crosses line that is less than zero. If your data is goal-oriented, you may want to set a crosses line at the goal point.

Figure 2-20 shows a crosses line at 100%.

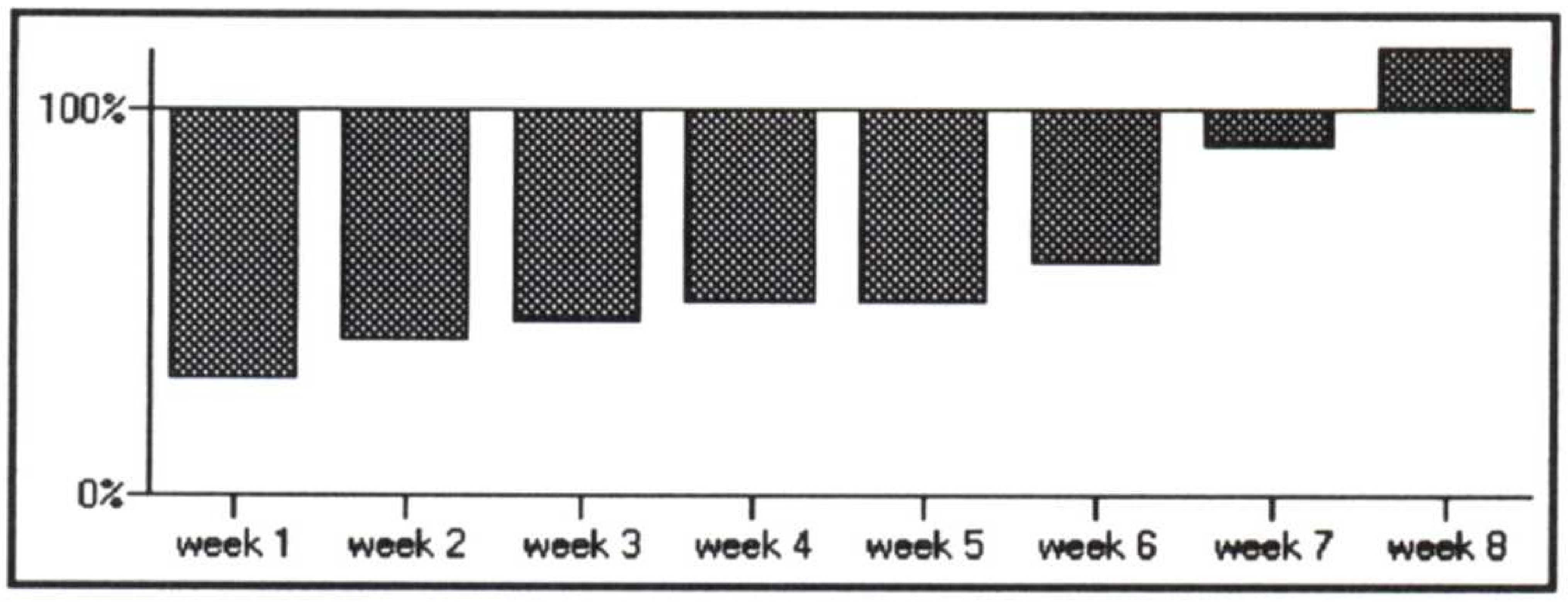


Figure 2-20 A Non-Zero Crosses Line

Reverse

Reverse reverses the numeric axis. Figure 2-21 shows a default chart on the left and a reversed chart on the right.

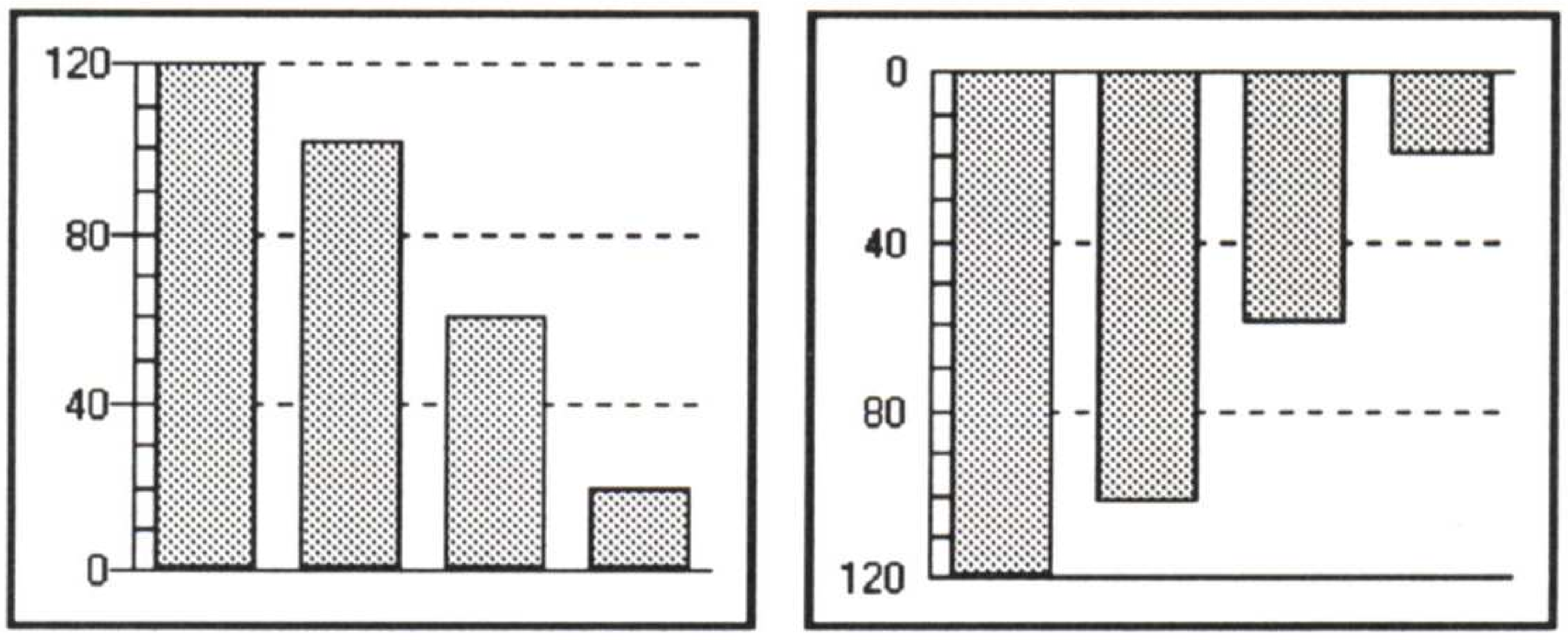


Figure 2-21 Default and Reversed Chart

Figure 2-22 shows a horizontal chart on the left and a horizontal, reversed chart on the right.

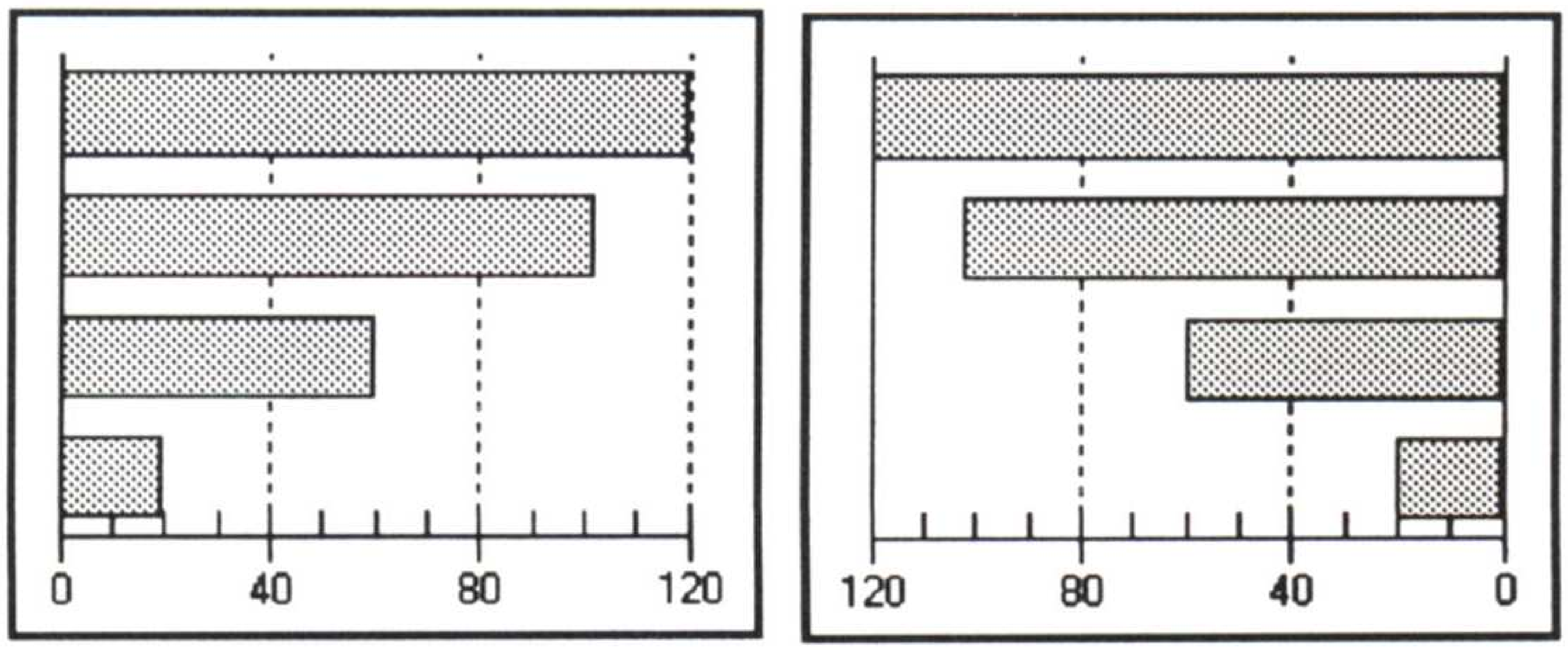
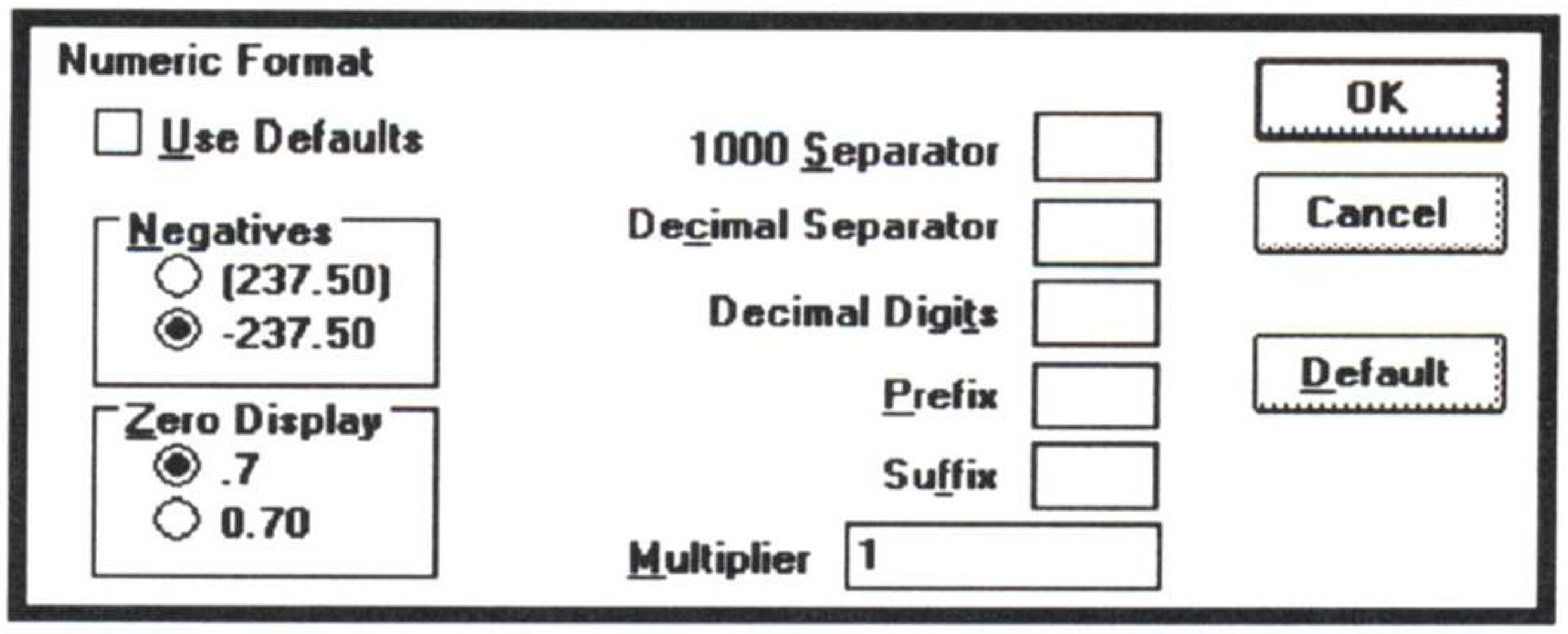


Figure 2-22 Horizontal and Horizontal, Reversed Chart

Format...

The Format button changes the way numbers are displayed on the numeric axis. Use the Numeric Format dialog box to specify numeric formats.



Numeric Format

☐ Use Defaults

Negatives
○ (237.50)
● -237.50

Zero Display
● .7
○ 0.70

1000 Separator ☐
Decimal Separator ☐
Decimal Digits ☐
Prefix ☐
Suffix ☐
Multiplier 1

Figure 2-23 Chart Numeric Format Dialog Box

For information about the options in this dialog box, refer to the Numeric Format command in *Chapter 5: Format Menu*.

Category Scale...

The Category Scale command specifies the chart's category scale (i.e., non-numeric scale). Use the Chart Category Scale dialog box to change the category scale.

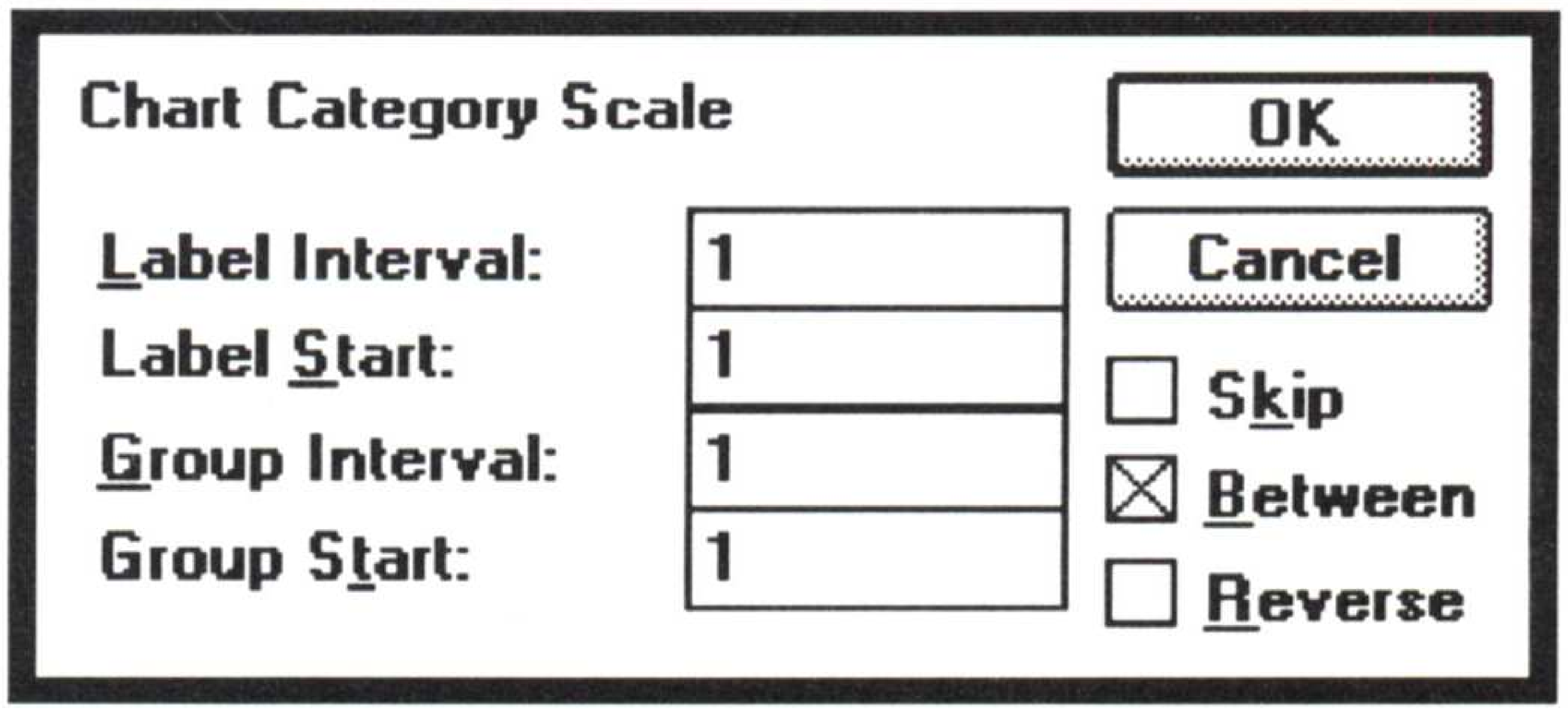


Chart Category Scale

Label Interval: 1
Label Start: 1
Group Interval: 1
Group Start: 1

☐ Skip
☒ Between
☐ Reverse

Figure 2-24 Chart Category Scale Dialog Box

Label Interval and Label Start control the display of label items on the category axis. Label items include label grid lines and label inside and outside ticks.

Group Interval and Group Start control the display of group items on the category axis. Group items include group grid lines, and group inside and outside ticks.

If a label, tick, or grid line does not display on the chart after you select a category scale value, the item is colored Invisible. Use the Chart Color command to change the color of chart items.

Label Interval

The Label Interval box specifies the frequency of category label items on the category axis. LightShip places the labels (that you selected using the Chart Label command) on data points according to this interval.

The chart on the left in Figure 2-25 uses a label interval of 3. Labels display at every third data point, beginning with the first data point.

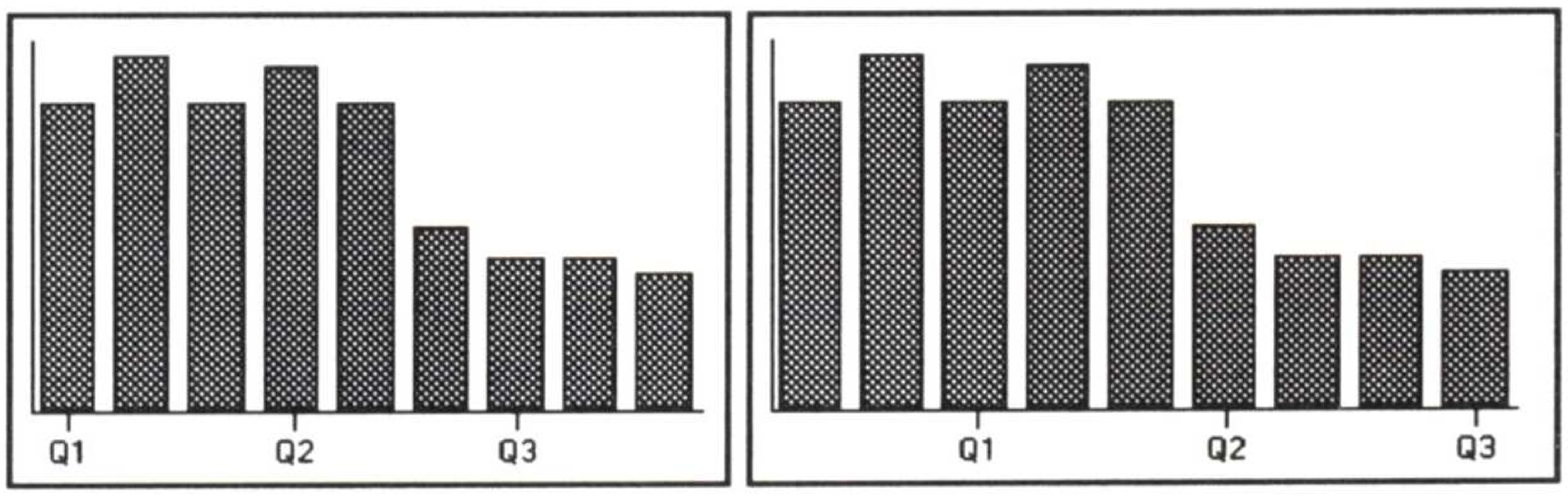


Figure 2-25 Label Intervals and Label Starts

Label Start

The Label Start box specifies the data point on which to start displaying category label items.

The chart on the right in Figure 2-25 uses a label start of 3 and a label interval of 3. The first label displays on the third data point, and then at every three data points.

Skip

The Skip box changes the order of labels from consecutive to every *n* labels, where *n* is the number specified for Label Interval.

If you use identical label start and label interval numbers, LightShip never displays a label on the first data point (unless the numbers are both 1). If you select a blank space as a label, LightShip counts it as a label and either skips it or displays a blank.

The chart on the left in Figure 2-26 uses Skip, Label Interval 3. The chart on the right in Figure 2-26 uses Skip, Label Start 3, Label Interval 3.

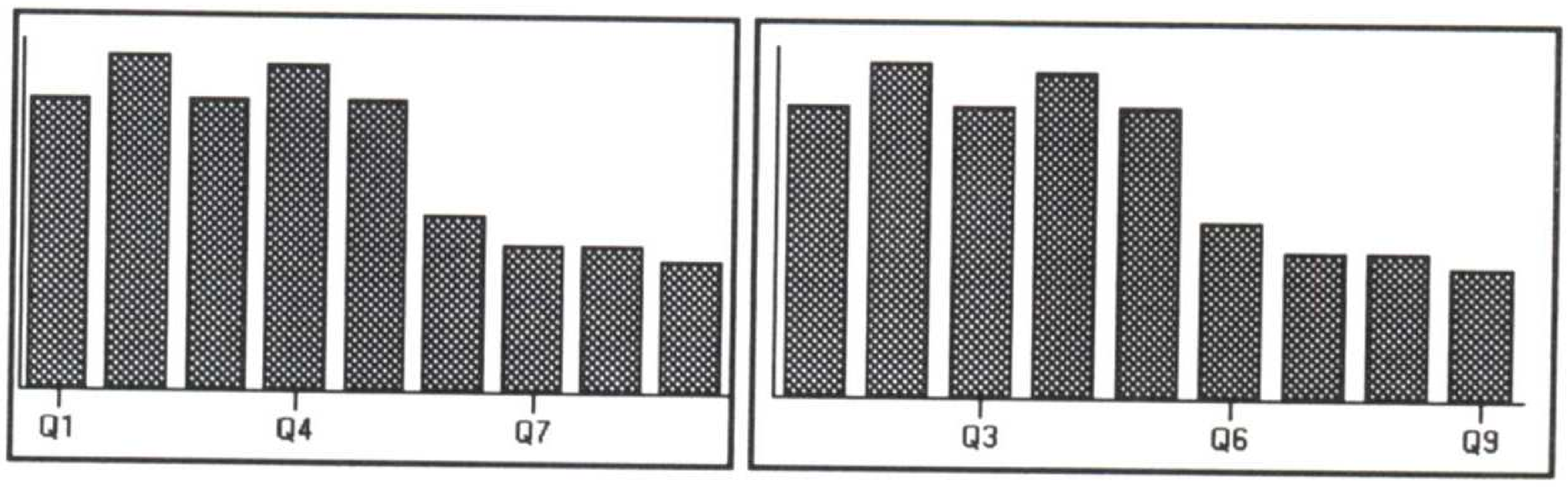


Figure 2-26 Skip Labels

Group Interval

The Group Interval box specifies the frequency of grouped grid lines and grouped inside and outside ticks on the category axis.

Group grid lines and ticks are independent of labels, label grid lines, and label ticks. If they intersect, the group color overrides the label's color.

The chart on the left in Figure 2-27 uses Group Interval 4. A grouped grid line appears on the first data point and then at every four data points.

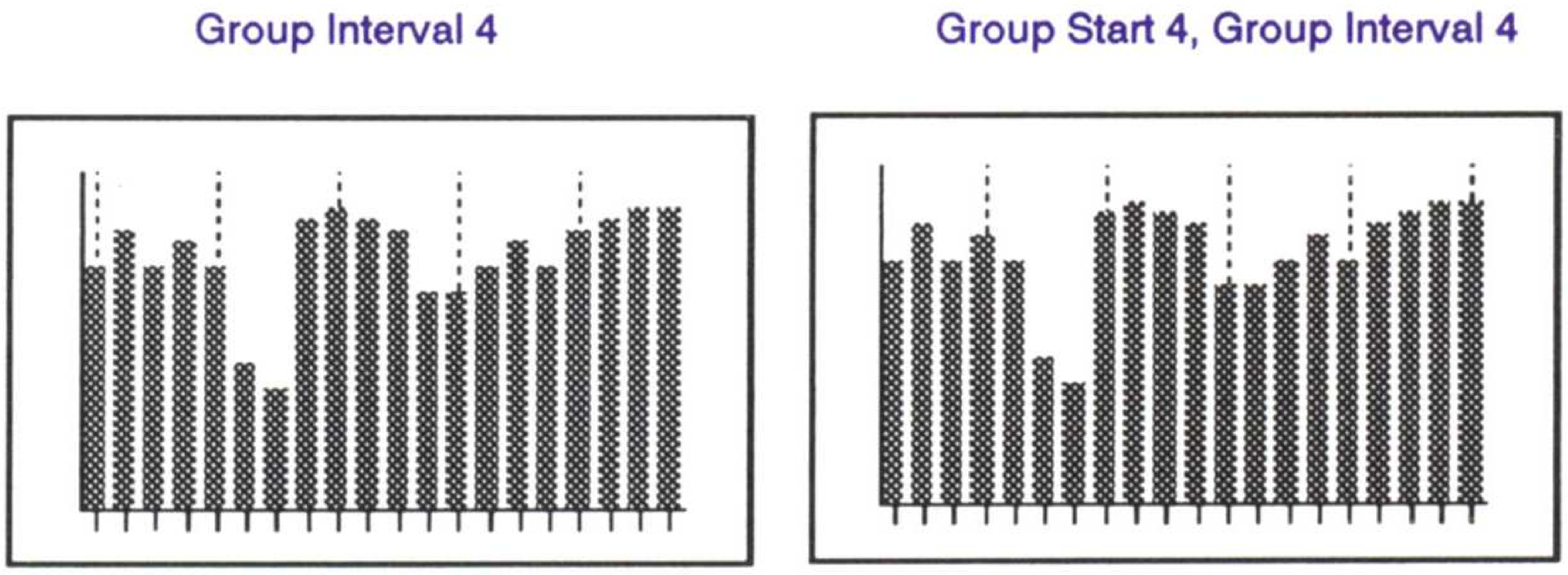


Figure 2-27 Group Intervals and Group Starts

Group Start

The Group Start box specifies the data point on which to display the first group item. The chart on the right in Figure 2-27 uses Group Start 4, Group Interval 4. The first group grid line displays at the fourth data point, then at every four data points.

Between

The Between option places group items between data point groups; otherwise, they appear centered on a data point group. Figure 2-28 shows a chart using Between.

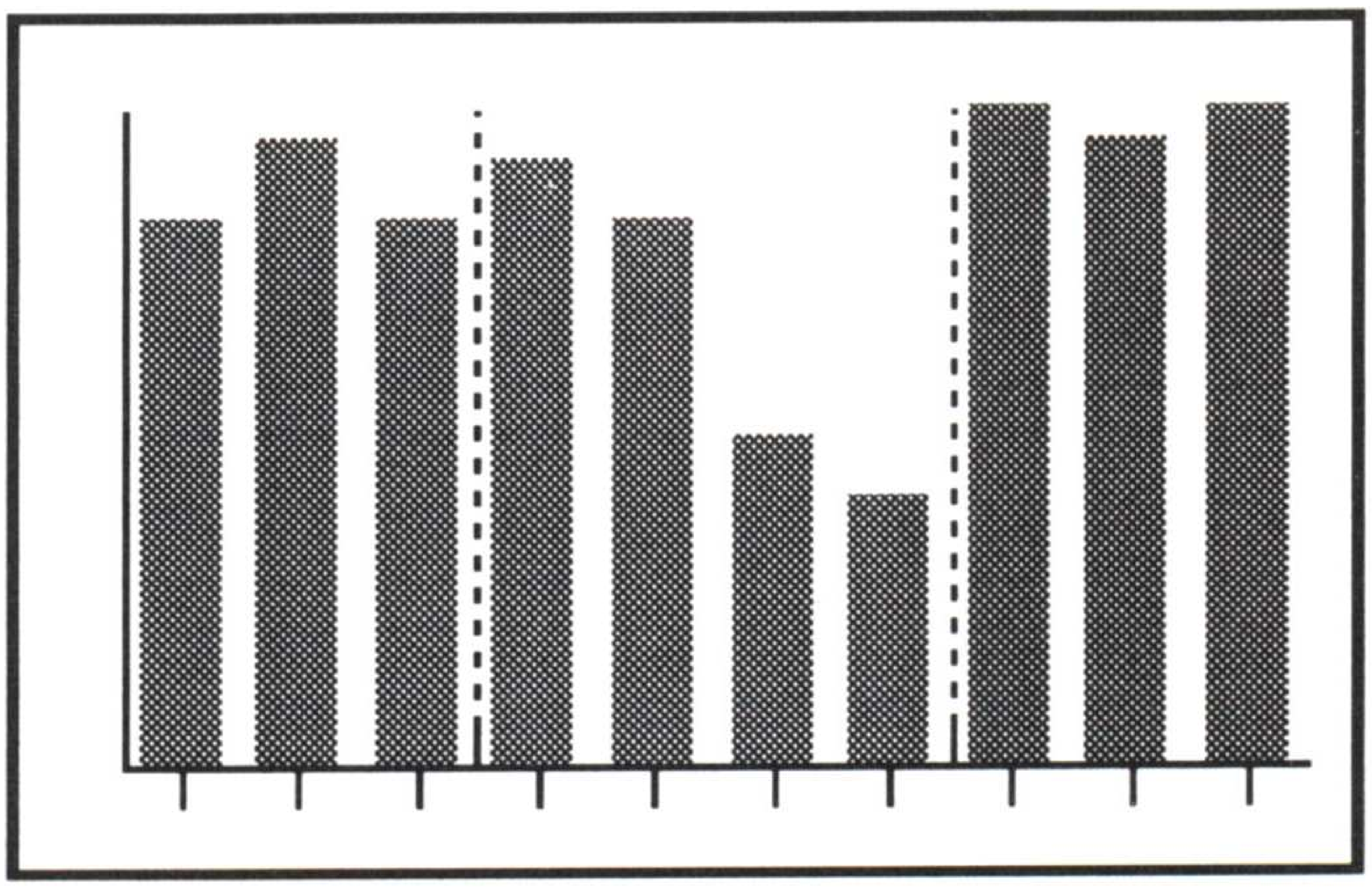


Figure 2-28 Group Between Data Points

Reverse

The Reverse option reverses the category axis. Figure 2-29 shows a default chart on the left and a reversed chart on the right.

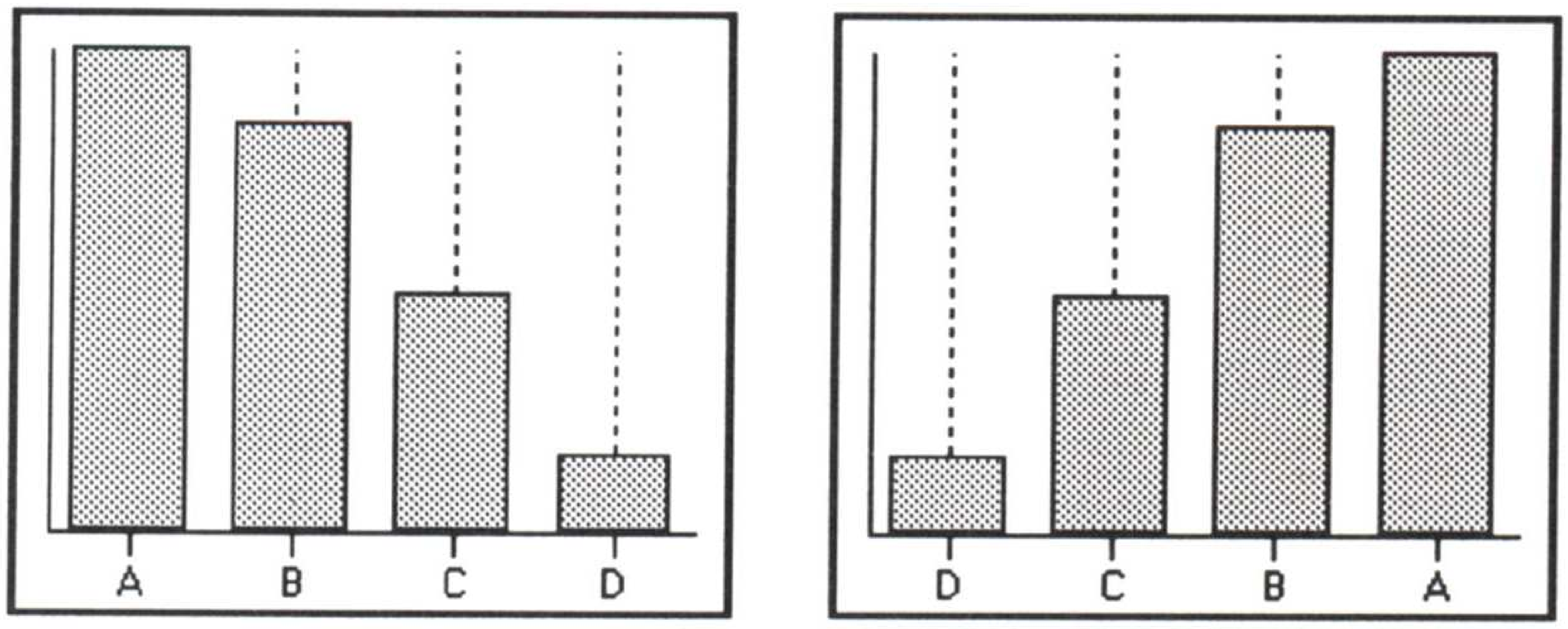


Figure 2-29 Default and Reversed Chart

Figure 2-30 shows a horizontal chart on the left (from the Chart Type command) and a horizontal, reversed chart on the right.

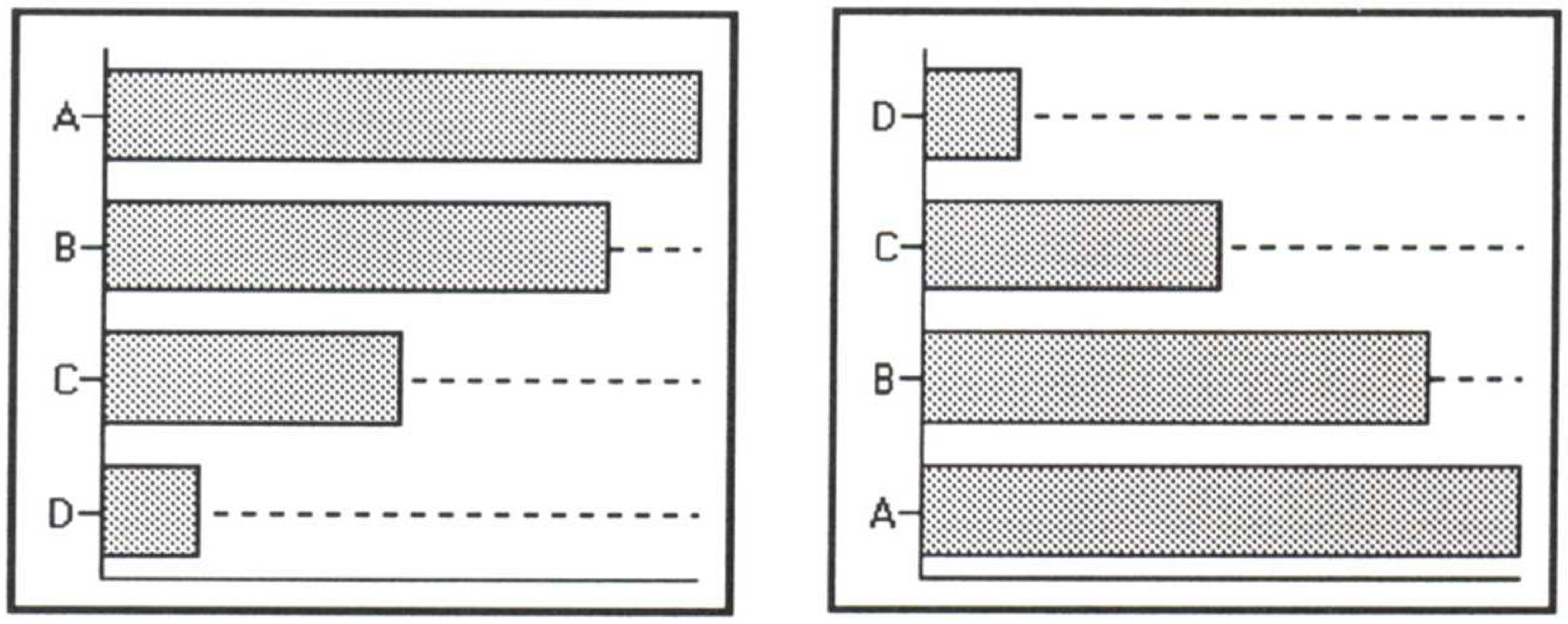


Figure 2-30 Horizontal and Horizontal, Reversed Chart

Color... (F5)

The Color command changes the color of the individual items in a chart. Use the Chart Colors dialog box to select a color for any chart item.

The Background color selections are available only when you select a chart item consisting of text so that you can specify a background color as well as a text color.

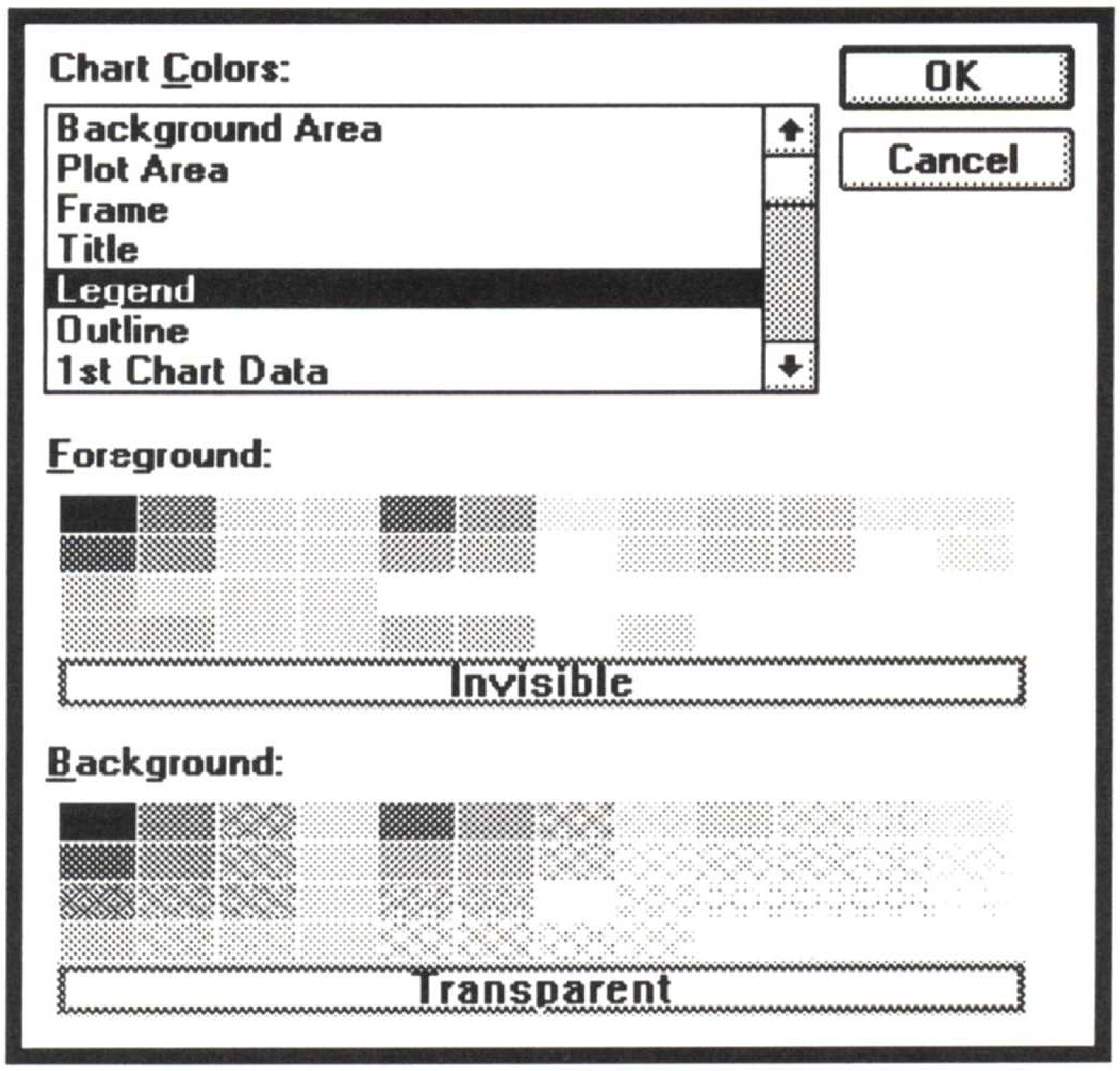


Figure 2-31 Chart Colors Dialog Box

Figure 2-32 shows the Background Area, Plot Area, Frame, Title, Legend, Outline, and Data Series of a chart.

Figure 2-33 shows these numeric items: the axis, labels, crosses line, major grid lines, major outside ticks, and minor inside ticks.

Figure 2-34 shows these category label items: the axis, labels, grid lines, inside ticks, and outside ticks.

Figure 2-35 shows these category group items: grid lines, inside ticks, and outside ticks.

Chart Colors

The Chart Colors box lists the items you can color. The selected item is colored by the Foreground color. If the item contains text, it is also colored by the Background color selections.

Foreground

The Foreground box changes the chart item's color to the new color you select. If the chart item contains text, the foreground color changes the item's text color. Use the Invisible option to remove the display of this chart item.

Background

The Background box is available for these text items only:

- Title
- Legend
- Numeric Label
- Category Label

The color you select changes the item's background color. Use the Transparent button to make the background color transparent; the color underneath it shows through as the background.

Background Area

Background Area colors the background of the chart, which extends to the length and width of the chart object.

Plot Area

Plot Area colors the plot area, which extends between the numeric and category axes.

Frame

Frame colors the outline around the plot area. If a frame appears to have two different colors, it means that other items are intersecting with the frame and coloring over it. These colors override the frame color if their lines intersect:

- Category axis
- Crosses line
- Numeric axis

Title

Title colors the text and background of the chart title.

Legend

Legend colors the text and background of the legend's text.

Outline

Outline outlines the chart's data series with the specified color. You can outline bars, areas, and pies, but not lines. This option also outlines the legend boxes, including line series legend boxes.

1st Chart Data ... 8th Chart Data

The selected data series number colors that data series.

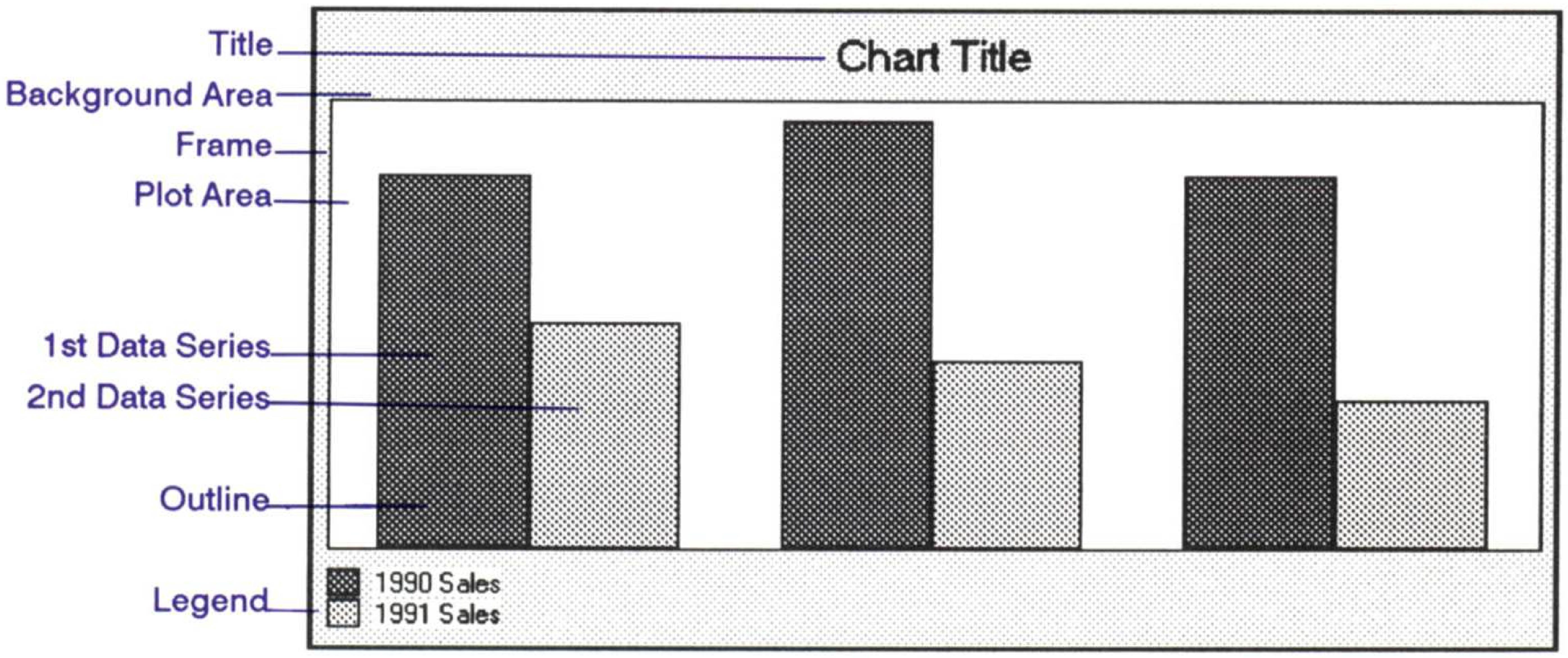


Figure 2-32 Chart Colors

Numeric Colors

Numeric labels and numeric major items display at the interval specified by the Major option in the Chart Numeric Scale dialog box.

Numeric minor items display at the interval specified by the Minor option in the Chart Numeric Scale dialog box.

Major and minor ticks and grid lines are the same size, may be the same color, and may intersect at certain data points. To emphasize the difference between major and minor items, use different colors. If they intersect, the major item's color overrides the minor item's color.

Numeric Label

Numeric Label colors the numeric label text and background.

Numeric Axis

Numeric Axis colors the numeric axis. If the numeric axis intersects with the frame, the numeric axis color overrides the frame color.

Numeric Major Grid, Numeric Major Inside Tick, Numeric Major Outside Tick

These options color the numeric major grid lines and major inside and outside ticks at major data points on the numeric axis.

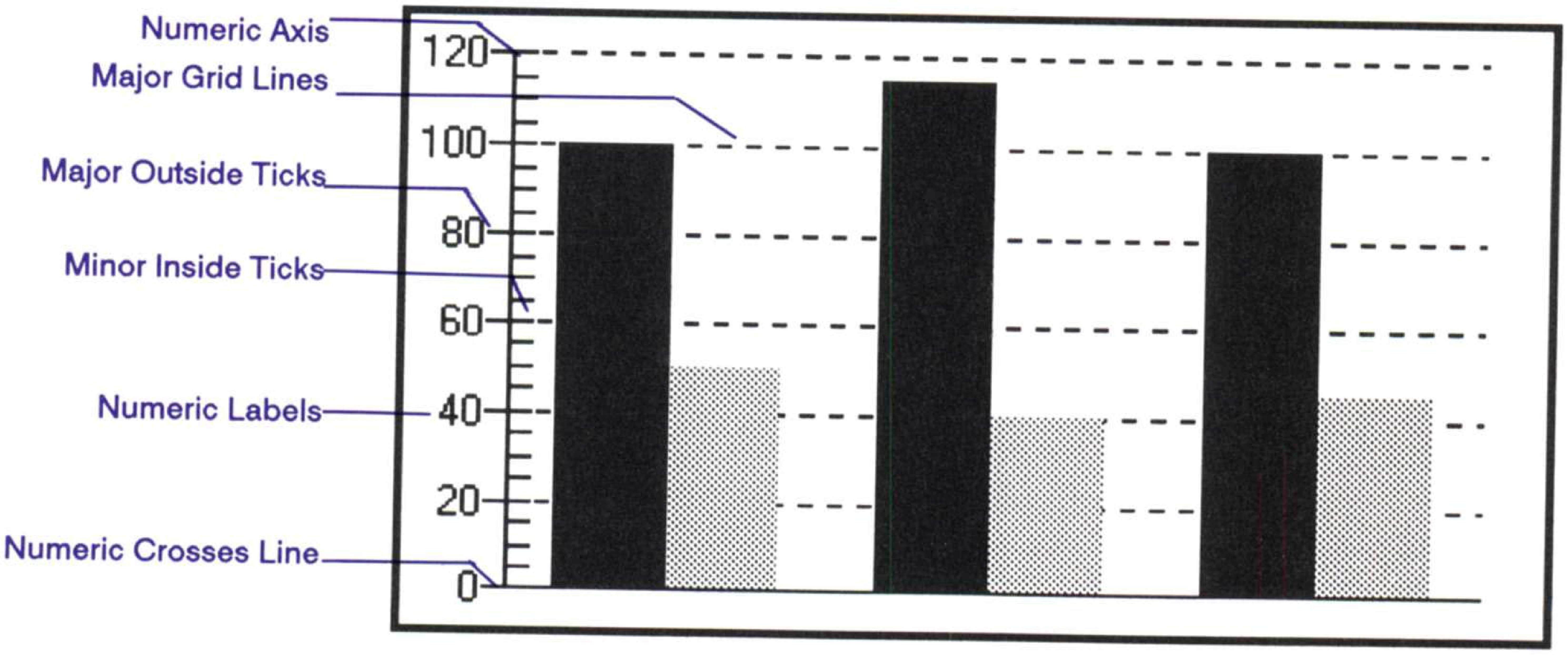


Figure 2-33 Numeric Colors

Numeric Minor Grid, Numeric Minor Inside Tick, Numeric Minor Outside Tick

These options color numeric minor grid lines, minor inside ticks, and minor outside ticks at minor data points on the numeric axis.

Numeric Crosses Line

Numeric Crosses Line colors the crosses line. Depending on the data, this line may intersect with the category axis and frame. If so, the crosses line color overrides the category axis and frame color.

Category Colors

Category label items all display at the same interval and starting point based on the Label options in the Chart Category Scale dialog box.

Category group items all display at the same interval and starting point based on the Group options that you specified with the Chart Category Scale command.

Label and group ticks and grid lines are the same size, may be the same color, and may intersect at certain data points.

To emphasize the difference between label and group items, use different colors for each. If a label and group item intersect, the group item colors over the label item.

Category Label

Category Label colors the category label text and background.

Category Axis

Category Axis colors the category axis. Depending on the data, the category axis may intersect with the frame and crosses line. If so, the crosses line color overrides the category axis and frame color. Use the Invisible color to hide overlapping colors and display the ones underneath.

Category Label Grid, Category Label Inside Tick, Category Label Outside Tick

These options color category label grid lines, label inside ticks, and label outside ticks at data points on the category axis.

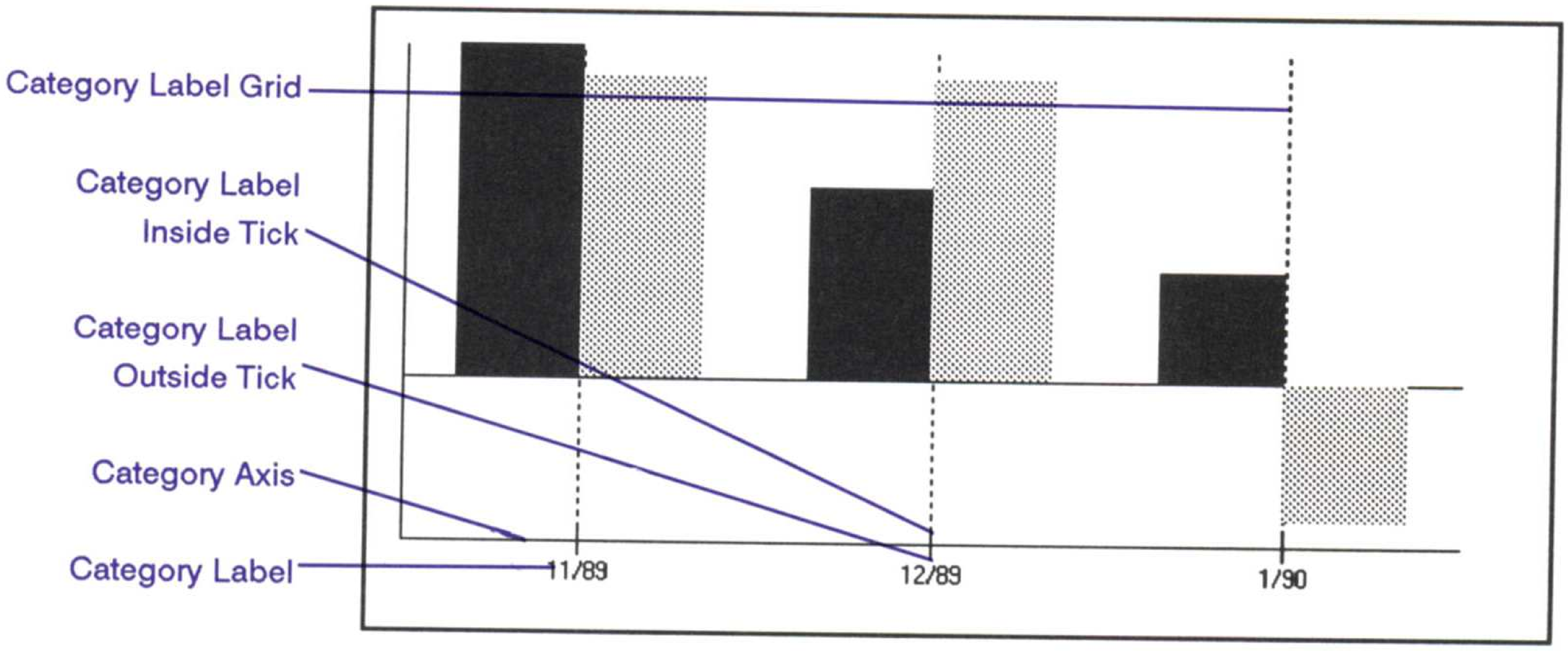


Figure 2-34 Category Colors

Category Group Grid, Category Group Inside Tick, Category Group Outside Tick

These options color group grid lines, group inside ticks, and group outside ticks at group data points.

Figure 2-35 shows group grid lines, group inside ticks, and group outside ticks between every three data points. They are independent from the category label outside ticks drawn at every data point.

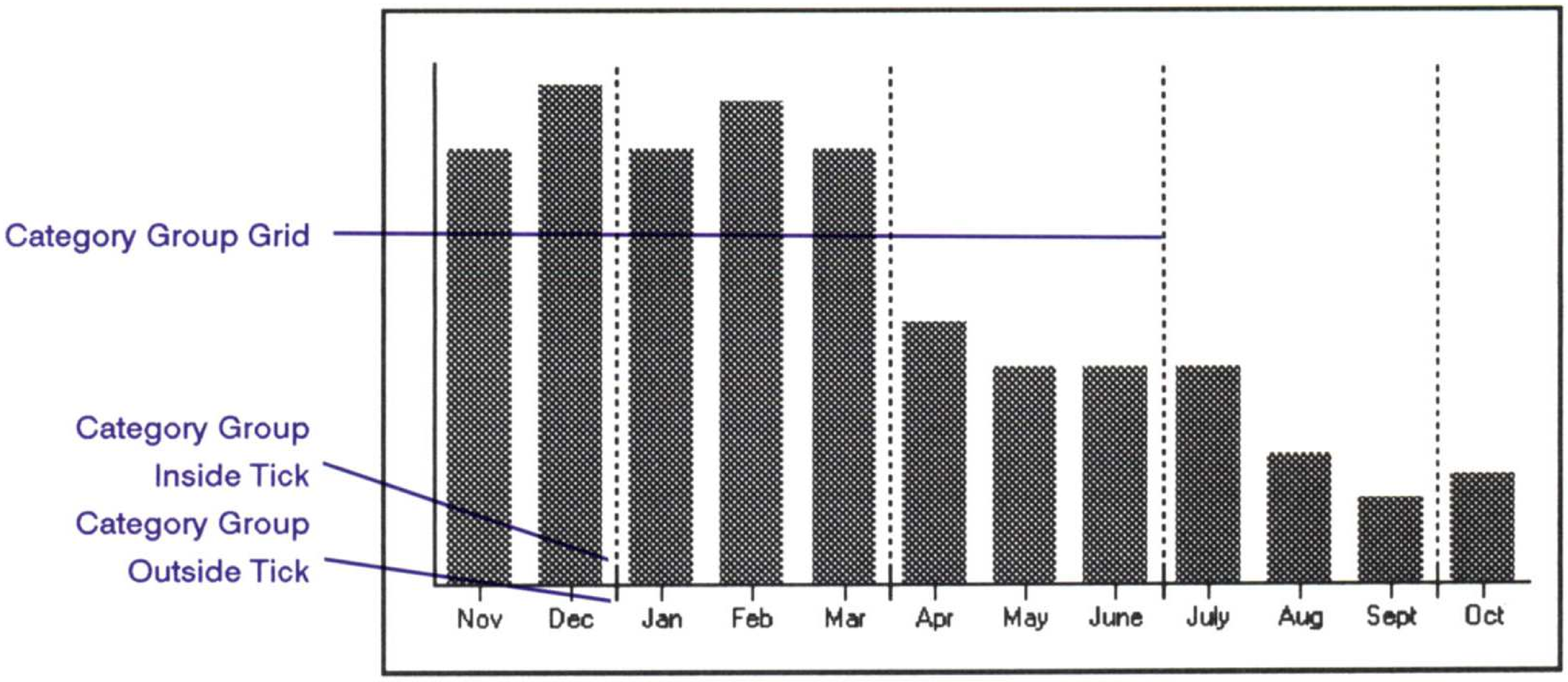


Figure 2-35 Group Colors

Font... (F6)

The Font command specifies the font type, size, and style for the chart items that display text. Use the Chart Fonts dialog box to select the item whose font you want to change.

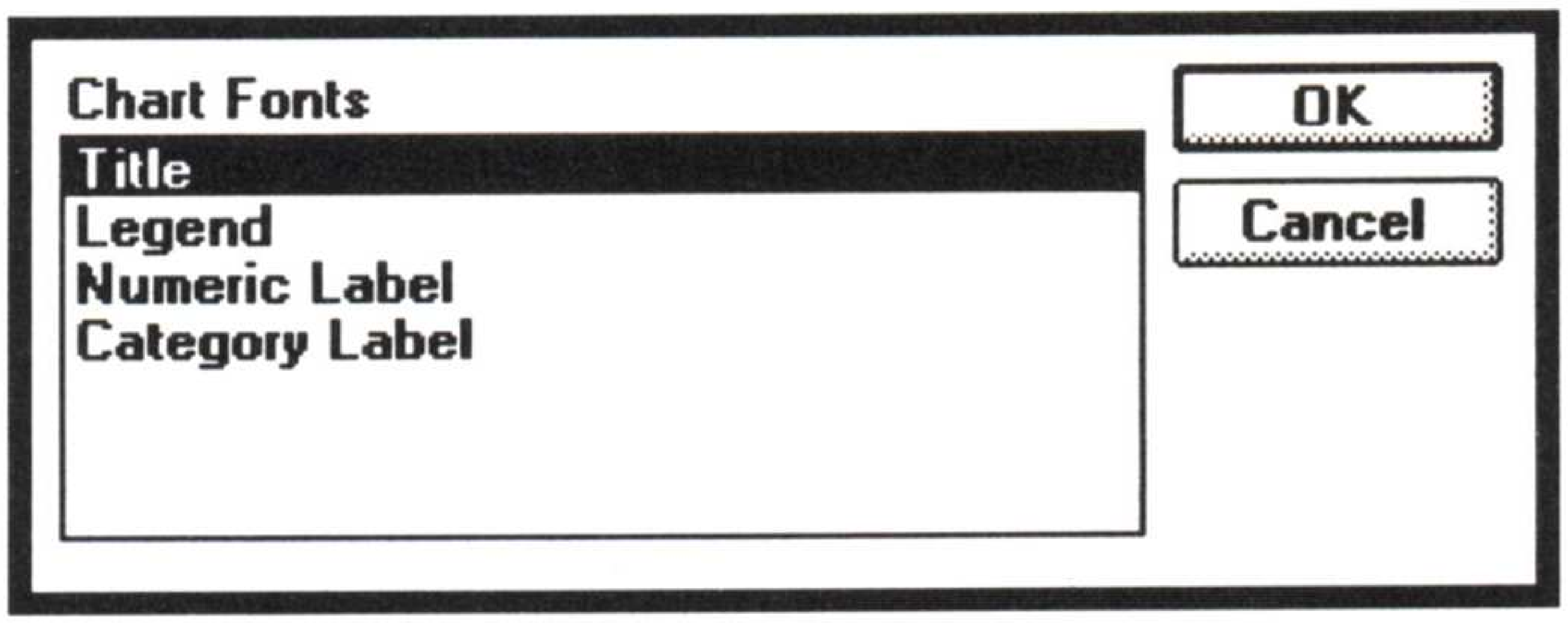
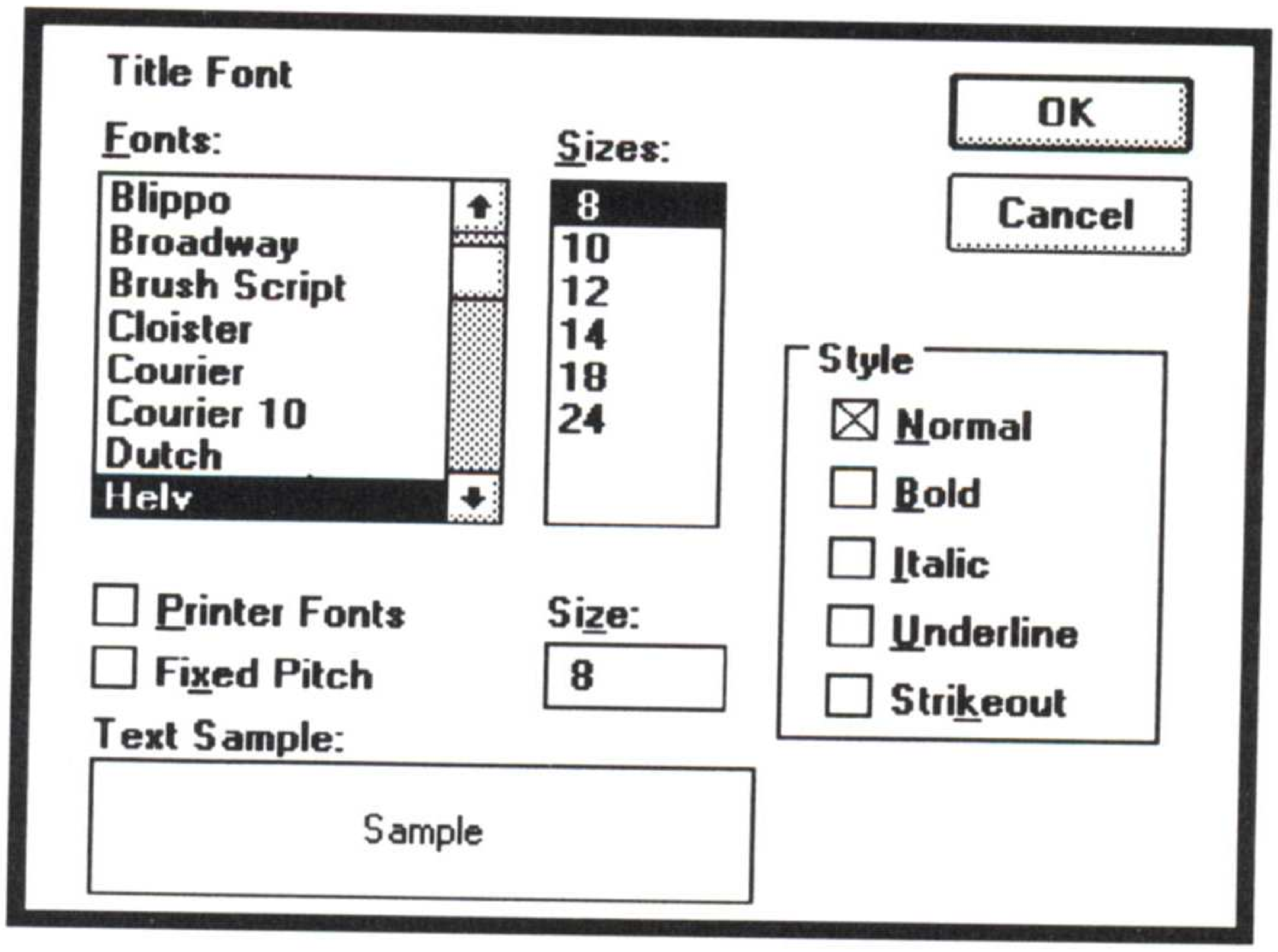


Figure 2-36 Chart Fonts Dialog Box

Title, Legend, Numeric Label, Category Label

Each option in the Chart Fonts dialog box opens a Title Font dialog box, where you can select a font for that chart item.



☒ Normal
☐ Bold
☐ Italic
☐ Underline
☐ Strikeout

☐ Printer Fonts
☐ Fixed Pitch

Size: 8

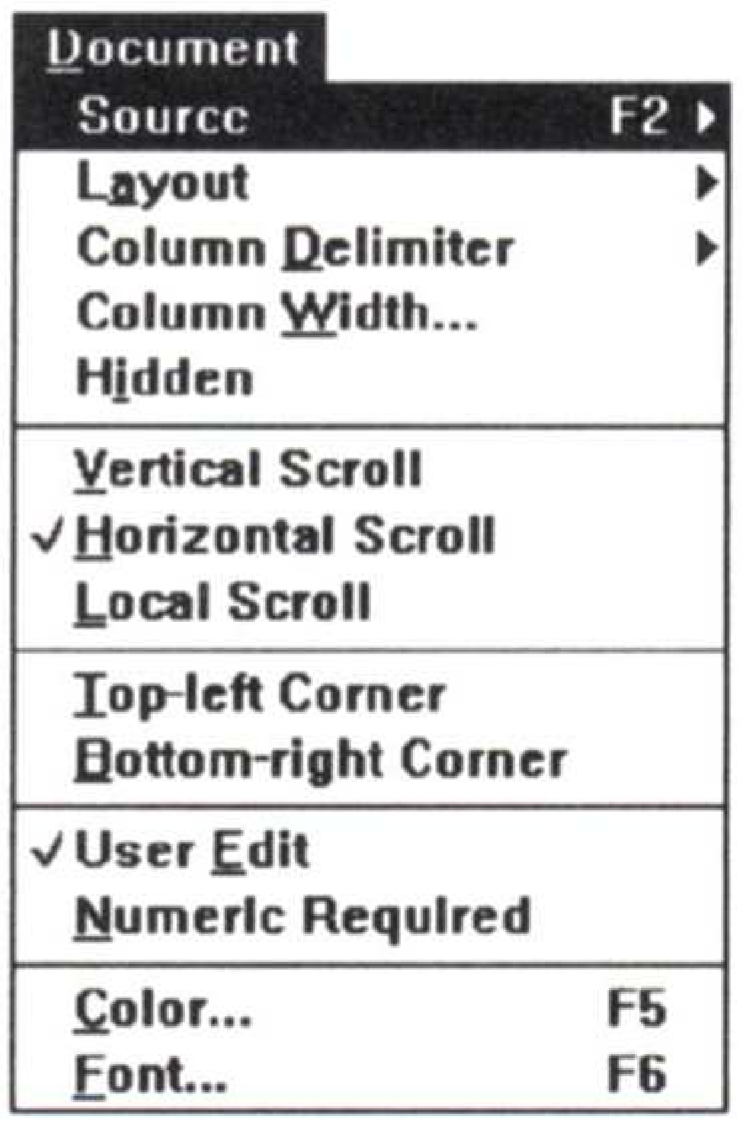
Figure 2-37 Chart Title Font Dialog Box

For information about the options in the dialog box, refer to the Text Font command in *Chapter 9: Text Menu*.

* * *

Chapter 3

Document Menu



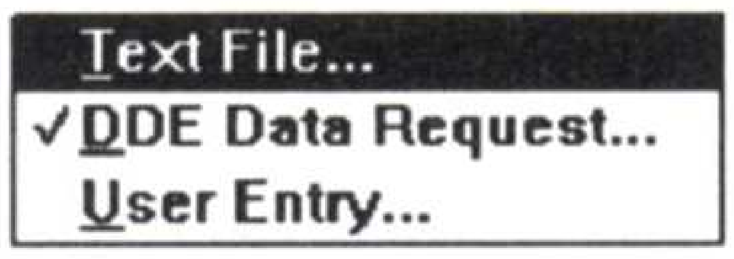
The Document Menu

Use the Document menu to display data in a document object from an ASCII text file, an application that supports DDE Requests, or data that you type at the Author and Browse levels.

You also use the Document menu to specify layouts, columns, scrolling, data entry at the Browse level, colors, and fonts.

LightShip always displays the most current data in a document object whenever you open a screen. For information about all the times that documents are updated, see the Special Calculation commands in *Chapter 1: The Menu Bar*.

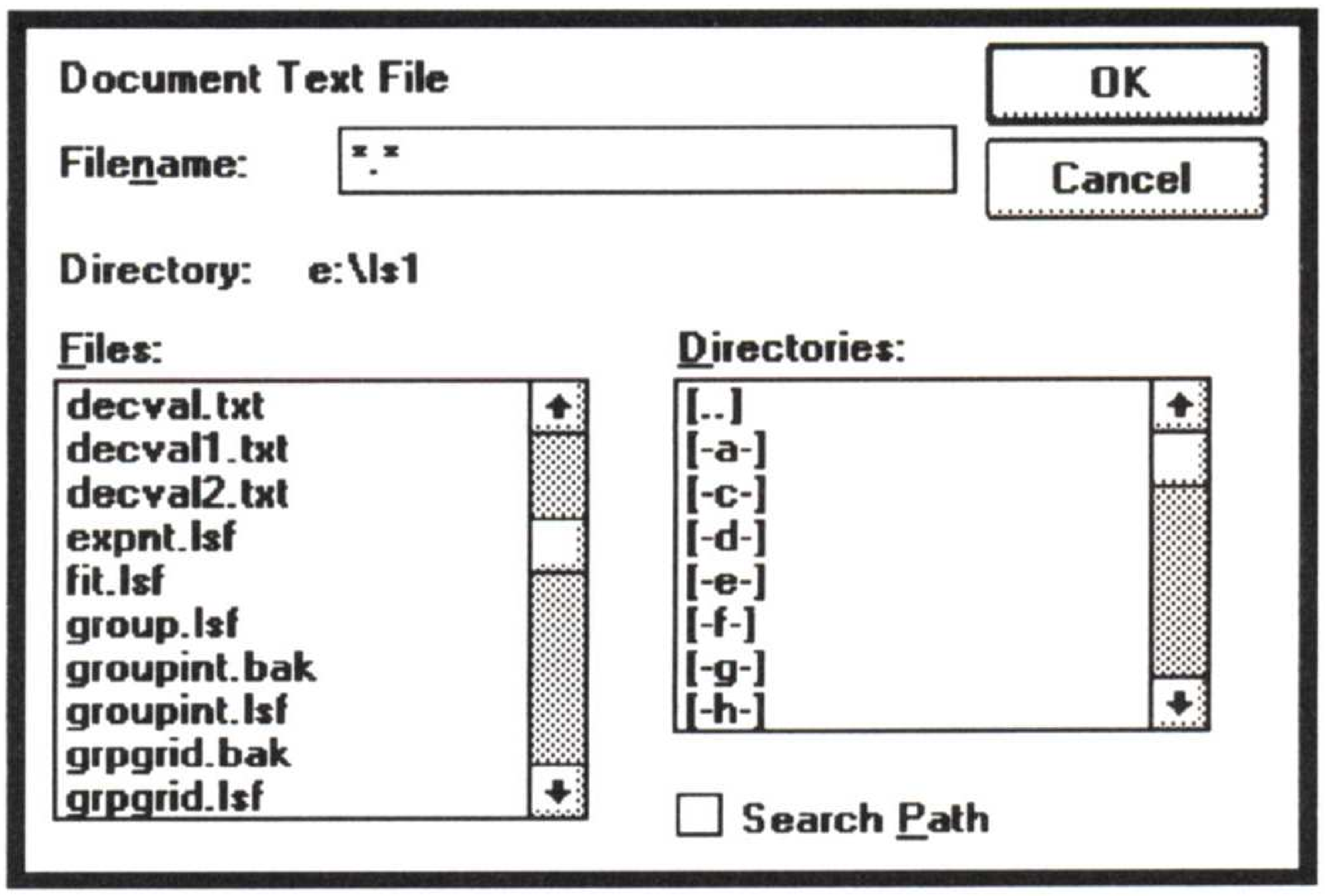
Source (F2)



The Source command displays a cascading menu for selecting the document object source.

Text File

The Text File command displays an ASCII text file in the document object. Use the Document Text File dialog box to specify a file to open.


Document Text File

Filename: *.*

Directory: e:\ls1

Files:
- decval.txt
- decval1.txt
- decval2.txt
- expnt.lsf
- fit.lsf
- group.lsf
- groupint.bak
- groupint.lsf
- grpgrid.bak
- grpgrid.lsf

Directories:
- [..]
- [-a-]
- [-c-]
- [-d-]
- [-e-]
- [-f-]
- [-g-]
- [-h-]

☐ Search Path

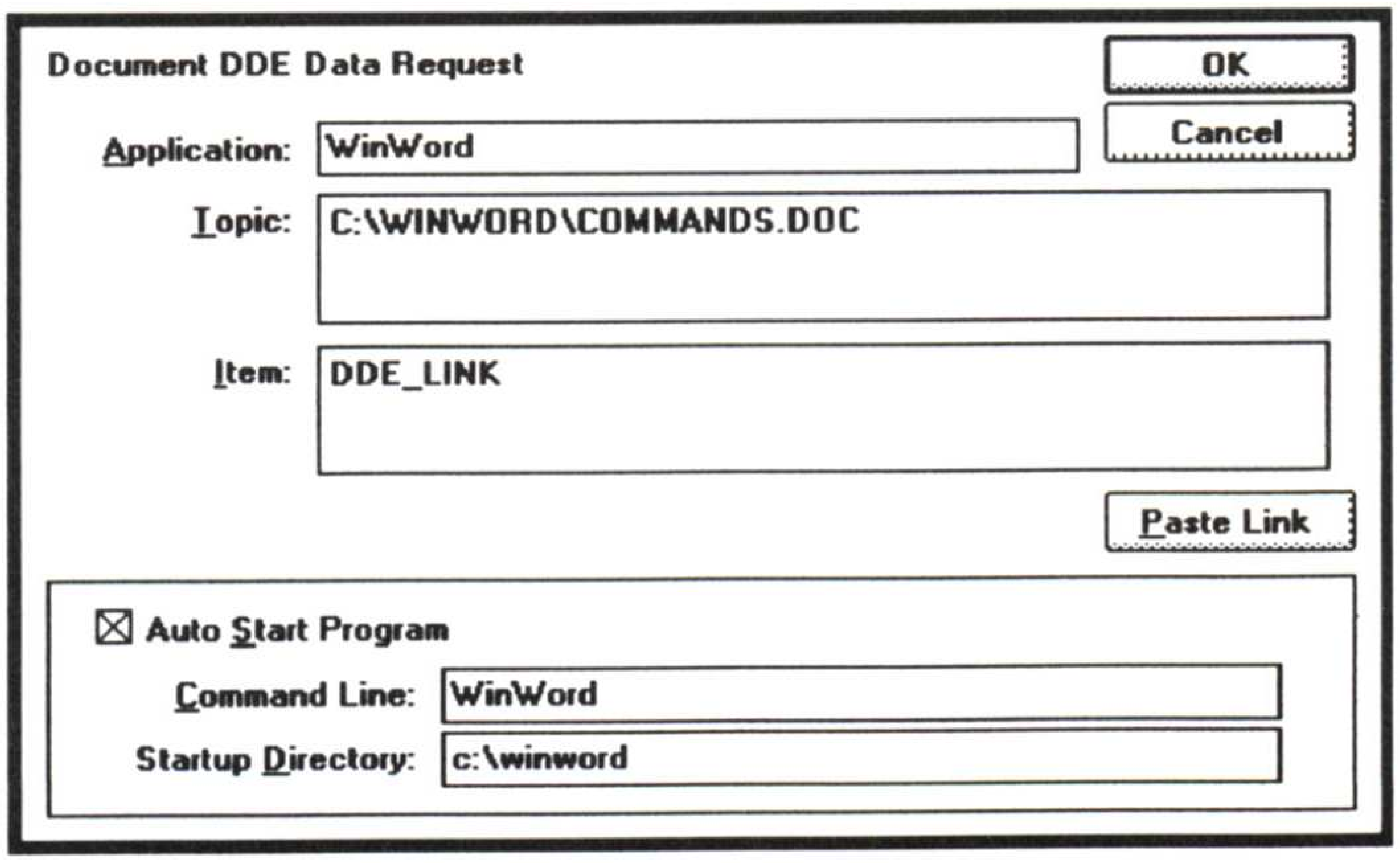
Figure 3-1 Document Text File Dialog Box

For information about the options in this dialog box, see the File Open command in *Chapter 1: The Menu Bar*.

DDE Data Request

The DDE Data Request command displays data from any application that supports DDE Requests. Use the Document DDE Data Request dialog box to specify the information you want to access from the server application.

For information on using DDE, see the *LightShip User's Guide*.


Document DDE Data Request

Application: WinWord

Topic: C:\WINWORD\COMMANDS.DOC

Item: DDE_LINK

☒ Auto Start Program

Command Line: WinWord

Startup Directory: c:\winword

Figure 3-2 Document DDE Data Request Dialog Box

Although the DDE Request format varies for each server application, you must provide at least the Application, Topic, and Item information. You can type the information directly into the boxes or use the Paste Link option.

Application

The Application box specifies the server application name, up to 32 characters, without the .EXE extension.

Topic

The Topic box specifies the data group or entity with which you want to communicate. Type a server filename or window name, which can be up to 255 characters.

If your request is longer than 255 characters, you might be able to execute a request using a hotspot or menu *DDE Execute* action. For information, refer to the server application's documentation.

Item

The Item box specifies the data object to be accessed in the DDE Request. Type an item, which can be up to 255 characters. For example, type a range name, a row and column specification, or the word "ALL".

Paste Link

The Paste Link button pastes from the Clipboard any data that supports the Link format. Use Paste Link instead of entering text into the Application, Topic, and Item text boxes. Paste Link is unavailable if there is no Link data on the Clipboard.

To Paste Link, switch to the server application and copy the data to the Clipboard. Switch back to LightShip and choose Paste Link to fill in the Application, Topic, and Item text boxes automatically.

Auto Start Program

The Auto Start Program option starts the server application when the DDE Request is issued if the program is not already running.

Command Line

The Command Line box specifies the command to start the server application. Use the command line text box to specify the full pathname of the server application at these times:

- When the path is not defined by the DOS Path command
- When the path is not entered in the Startup Directory text box

You might want to add the pathnames of server applications as global variables in LS.INI; then you can reference the global variable on the command line. For example, in the [Globals] section of LS.INI, type:

```
&&qe:= c:\qe\qe.exe
```

and reference it on the command line as:

```
@(&&qe)
```

Startup Directory

The Startup Directory box starts the server application in a different directory than the current directory. Type a different drive and directory in the Startup Directory text box to use the files in that directory; this way, you do not need to specify a path and the current working directory remains the same.

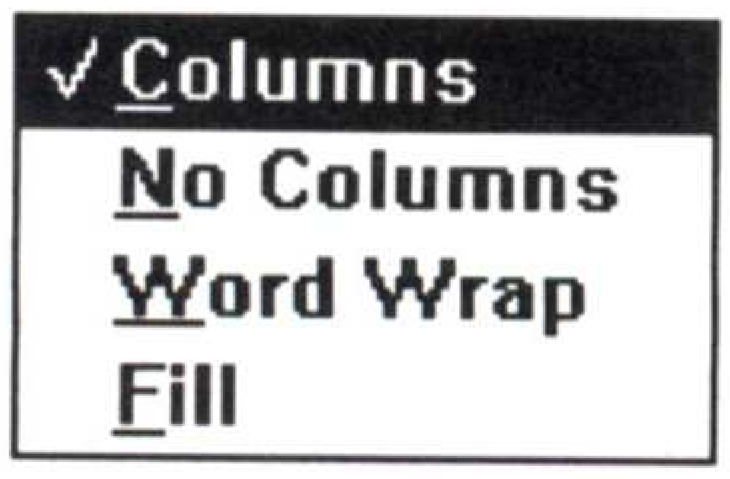
User Entry

The User Entry command allows you to type directly into a document object at the Author level.

Use the User Edit command to make data entry available at the Browse and Capture levels.

Layout

The Layout command displays a cascading menu with commands for specifying the document's layout.



Columns

The Columns command turns on the Column Delimiter command. This enables you to display and reference columns of document object data using proportional fonts with monospacing. If you use any other Layout command, the Column Delimiter command is unavailable.

Document objects that are in columns enable you to:

- Point to column(s) of data for formats, charts, variable values, and *Function* action arguments.
- Use the MOUSECOLUMN *Function* action. For information, refer to *Chapter 11: Functions*.

☞ **Important**

Use the No Columns, Word Wrap, and Fill commands on documents that display paragraphs of text. You should not apply these commands to documents using format objects.

No Columns

The No Columns command displays proportional fonts in a document with proportional spacing.

Word Wrap

The Word Wrap command wraps text to the next line, depending on the size of the document object. Carriage returns and line feeds remain intact and continue to mark the end of a line. When you increase or decrease the object size, data automatically rewraps.

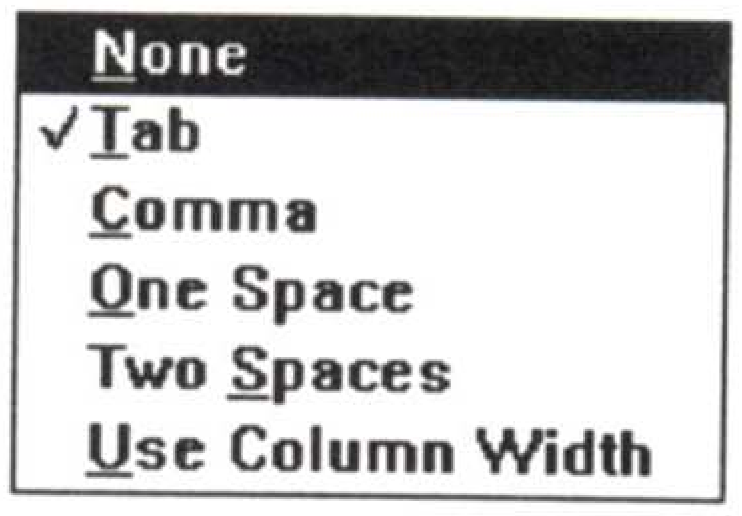
Fill

The Fill command wraps text by filling the entire document object, ignoring carriage returns and line feeds. Text that exceeds the document object size is wrapped to the next line; text that falls short of the object size moves up to the previous line.

When you increase or decrease the object size, text automatically rewraps to fit the new size.

LightShip treats two carriage returns in a row as a paragraph marker and begins the following text on a new line.

Column Delimiter



The Column Delimiter command displays a cascading menu with commands for specifying the character in the document object data that begins a new column.

The Column Delimiter command is available when you turn on the Layout Columns command. Documents in columns directly affect several objects, as listed in the Document Layout Columns command.

None

The None command displays the document object data without columns, enabling you to select data in Point mode character by character. None makes the Column Width command unavailable so that you cannot specify any column widths.

If you use None on data that is affected by a format object, you must select extra spaces in Point mode to allow for prefixes and suffixes.

Tab

The Tab command defines a new column in the data every time LightShip encounters a TAB character.

Comma

The Comma command defines a new column every time LightShip encounters a comma.

One Space

The One Space command defines a new column every time LightShip encounters one or more consecutive spaces.

Two Spaces

The Two Spaces command defines a column every time LightShip encounters two or more consecutive spaces.

Use Column Width

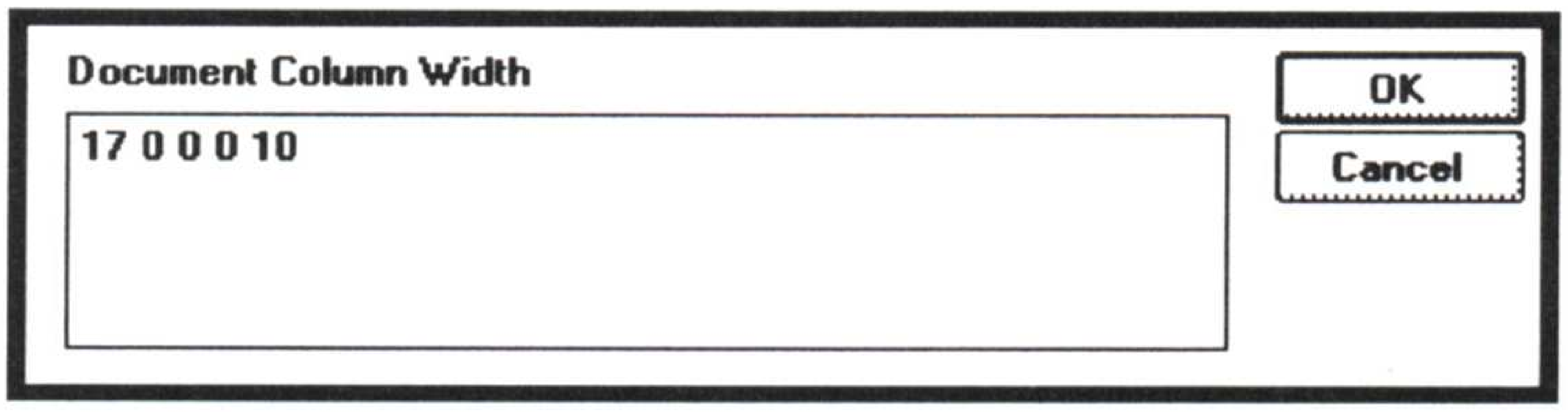
The Use Column Width command sets the columns to the width that you specify in the Column Width dialog box. This option changes a document's column widths when you apply a format object to the document.

Column Width...

The Column Width command specifies the widths of up to 20 columns for a document object. Use the Document Column Width dialog box to enter the column widths.

Type one number to space all columns with the same width; type multiple numbers separated by a space to space columns individually; type a zero width to hide the data in a column. If you enter fewer numbers than columns, the last width is repeated for the extra columns.

All column delimiter options allow you to specify a column width except the None option.



17 0 0 0 10

Figure 3-3 Document Column Width Dialog Box

Hidden

The Hidden command removes the display of the document object at all levels. Use Hidden on documents whose sole purpose is for pointing to chart data, text required hotspots, *Function* action arguments, and so on. To view or outline a hidden document object:

- Choose View Show Hidden Objects to display it.
- Go to Point mode where all documents appear for selecting data.
- Choose View Outline All Objects to outline all objects with a dotted line.
- Select it at the Author level to outline it.
- Double-click on the object number in the Debug window to select it.

Scroll Commands

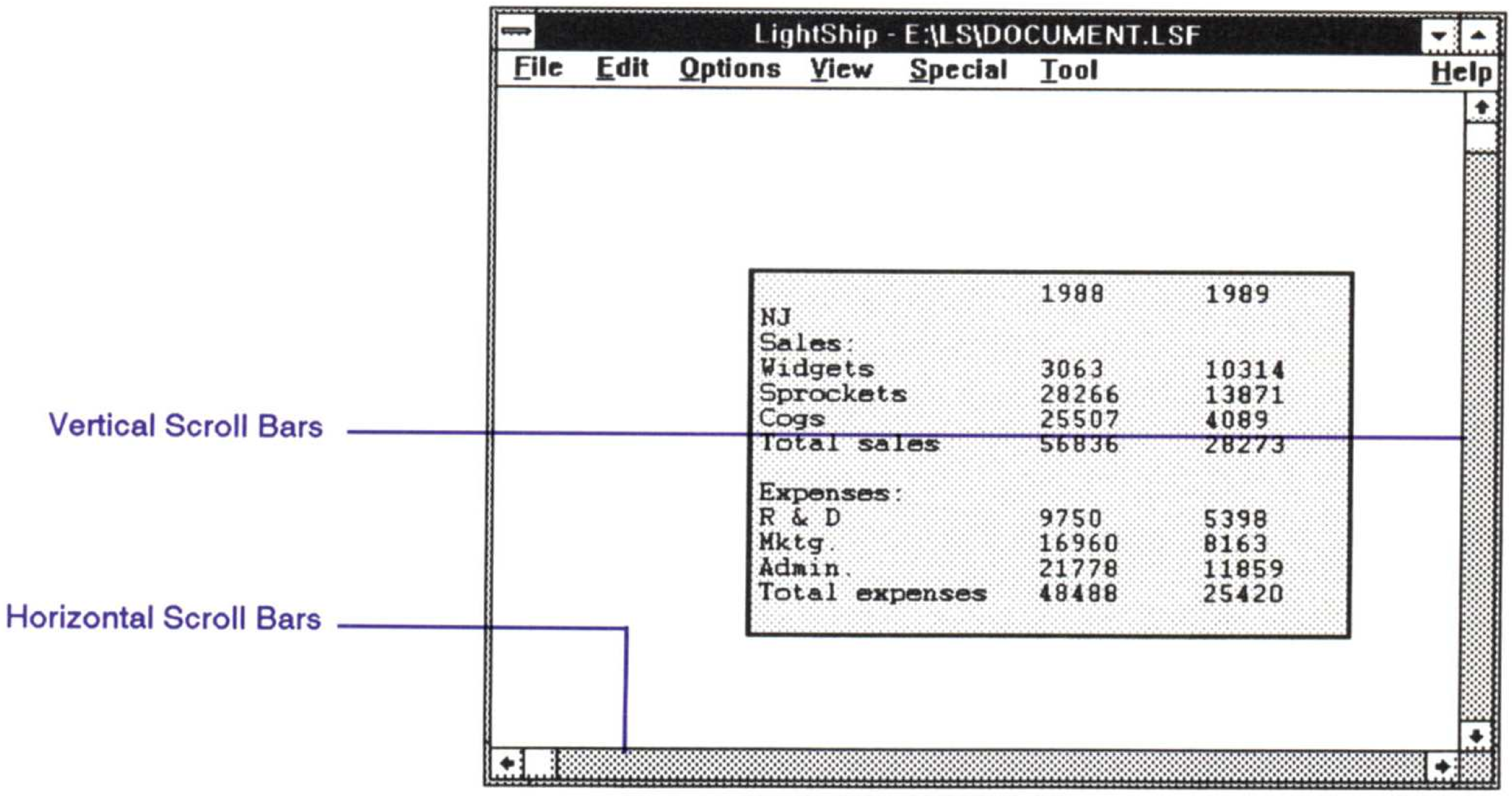
You can make scroll bars available at the Browse level by choosing the Horizontal and Vertical Scroll commands. If you choose the commands and still no scroll bars appear, it means that the entire length or width of the document is already displayed and it does not require scrolling. When you decrease the document object size, the scroll bars appear.

The Options Hide Scroll Bars command hides all non-local scroll bars at the Browse and Capture levels.

Vertical Scroll

The Vertical Scroll command places a vertical scroll bar on the screen at all levels. When Vertical Scroll is on, you can:

- Use Local Scroll to place a vertical scroll bar directly on the document;
- Use the *Scroll Up*, *Scroll to Top*, *Scroll Down*, and *Scroll All to Top* hotspot and menu actions;
- Use Options Scroll by Page to scroll through the document page by page.



	1988	1989
NJ		
Sales:		
Widgets	3063	10314
Sprockets	28266	13871
Cogs	25507	4089
Total sales	56836	28273
Expenses:		
R & D	9750	5398
Mktg.	16960	8163
Admin.	21778	11859
Total expenses	48488	25420

Figure 3-4 Vertical and Horizontal Scroll Bars

Horizontal Scroll

The Horizontal Scroll command places a horizontal scroll bar on the bottom of the screen at all levels. When Horizontal Scroll is on, you can:

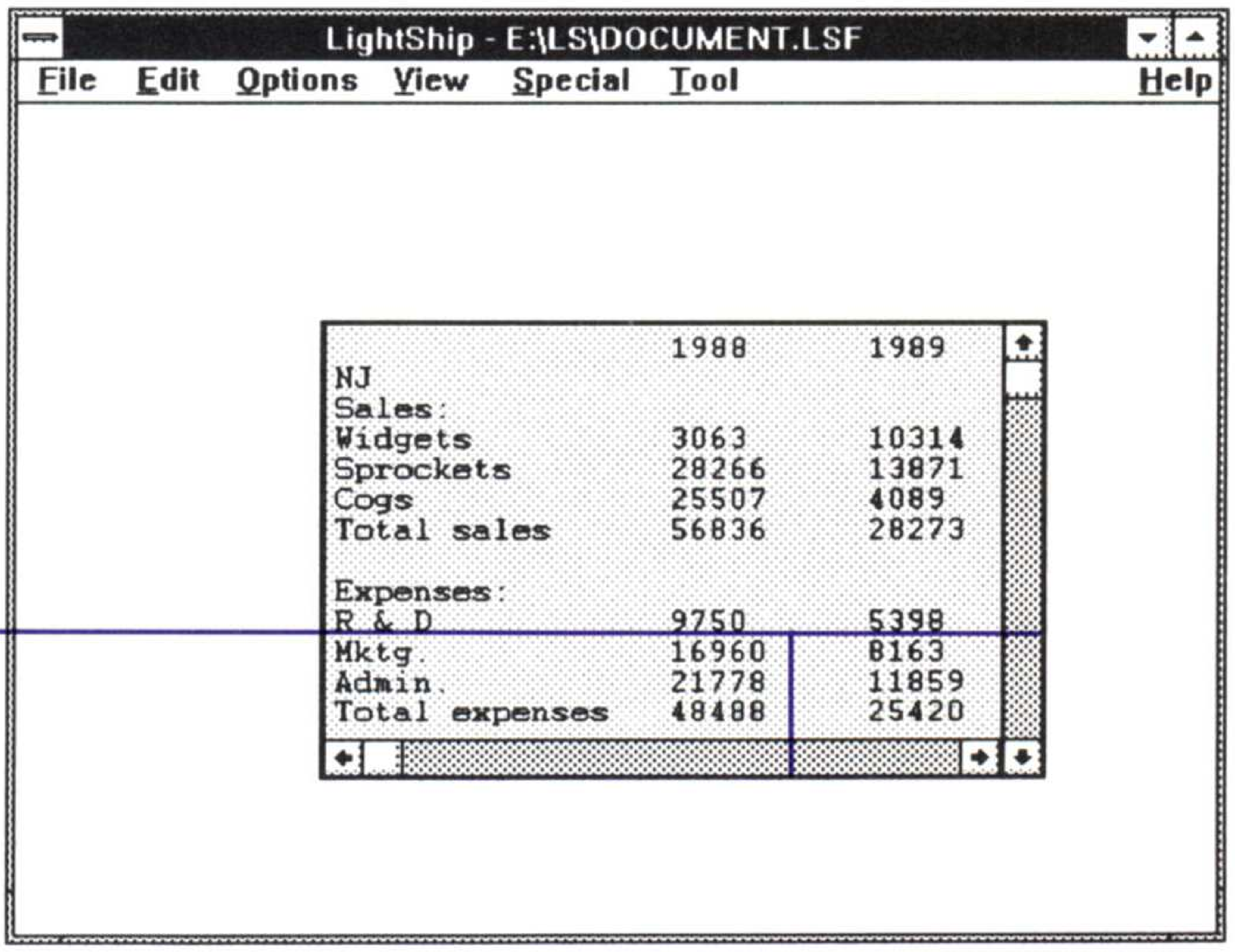
- Use Local Scroll to place a horizontal scroll bar directly on the document;
- Use the *Scroll Left* and *Scroll Right* hotspot and menu actions.

Local Scroll

The Local Scroll command places scroll bars directly in a document object at all levels. A vertical scroll bar appears if you choose the Vertical Scroll command. A horizontal scroll bar appears if you choose the Horizontal Scroll command.

When Local Scroll is on, you can add a hotspot or menu *Scroll All Documents to Top* action to scroll this document object to the top with other document objects. The *Scroll Up*, *Scroll Down*, and *Scroll to Top* actions do not scroll documents with local scroll bars.

If you turn off Local Scroll, use the scroll bars on the bottom and right edges of the screen.



	1988	1989
NJ		
Sales:		
Widgets	3063	10314
Sprockets	28266	13871
Cogs	25507	4089
Total sales	56836	28273
Expenses:		
R & D	9750	5398
Mktg.	16960	8163
Admin.	21778	11859
Total expenses	48488	25420

Local Scroll Bars

Figure 3-5 Local Scroll Bars

Top-left Corner

The Top-left Corner command disables scrolling above or to the left of the top-left character position currently showing in the document. You can use Top-left Corner and Bottom-right Corner together or separately.

Bottom-right Corner

The Bottom-right Corner command disables scrolling below or to the right of the bottom-right character position currently showing in the document.

User Edit

The User Edit command allows you to edit a user-entry document at the Browse and Capture levels. Data that you type at these levels overwrites any existing data. If you type a variable reference at the Author level, data that you type at the Browse level is assigned to the variable and displayed. Use CTRL+TAB to delimit columns and CTRL+ENTER to delimit rows.

Numeric Required

The Numeric Required command restricts the data entry in a user-entry, user-edit document object to numeric data at the Browse and Capture levels. If you enter characters, LightShip displays a message.

Color... (F5)

The Color command changes the color of the document's text and background. Use the Text Color dialog box to select colors.

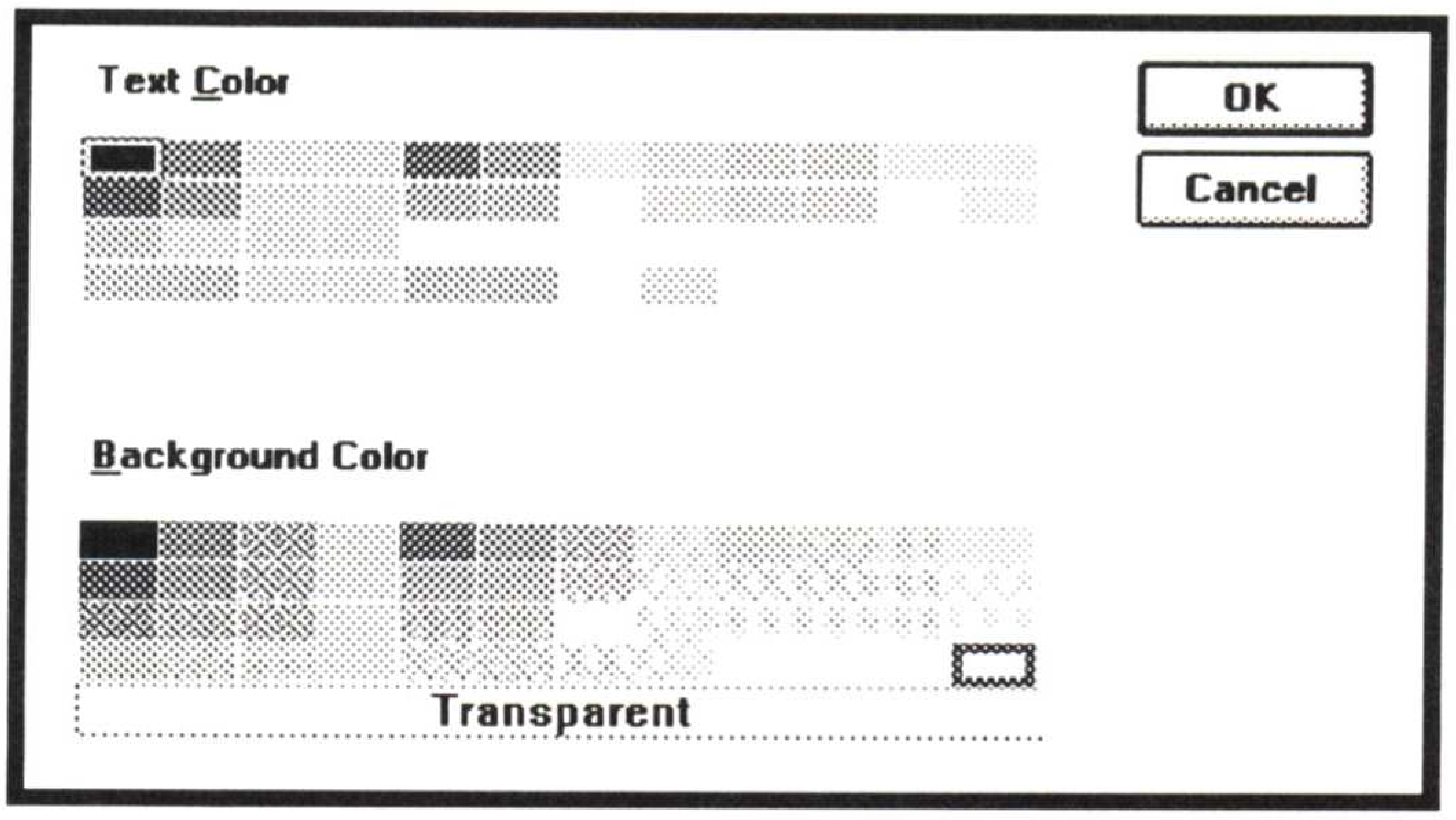


Figure 3-6 Text Color Dialog Box

Text Color

The Text Color colors the document's text.

Background Color

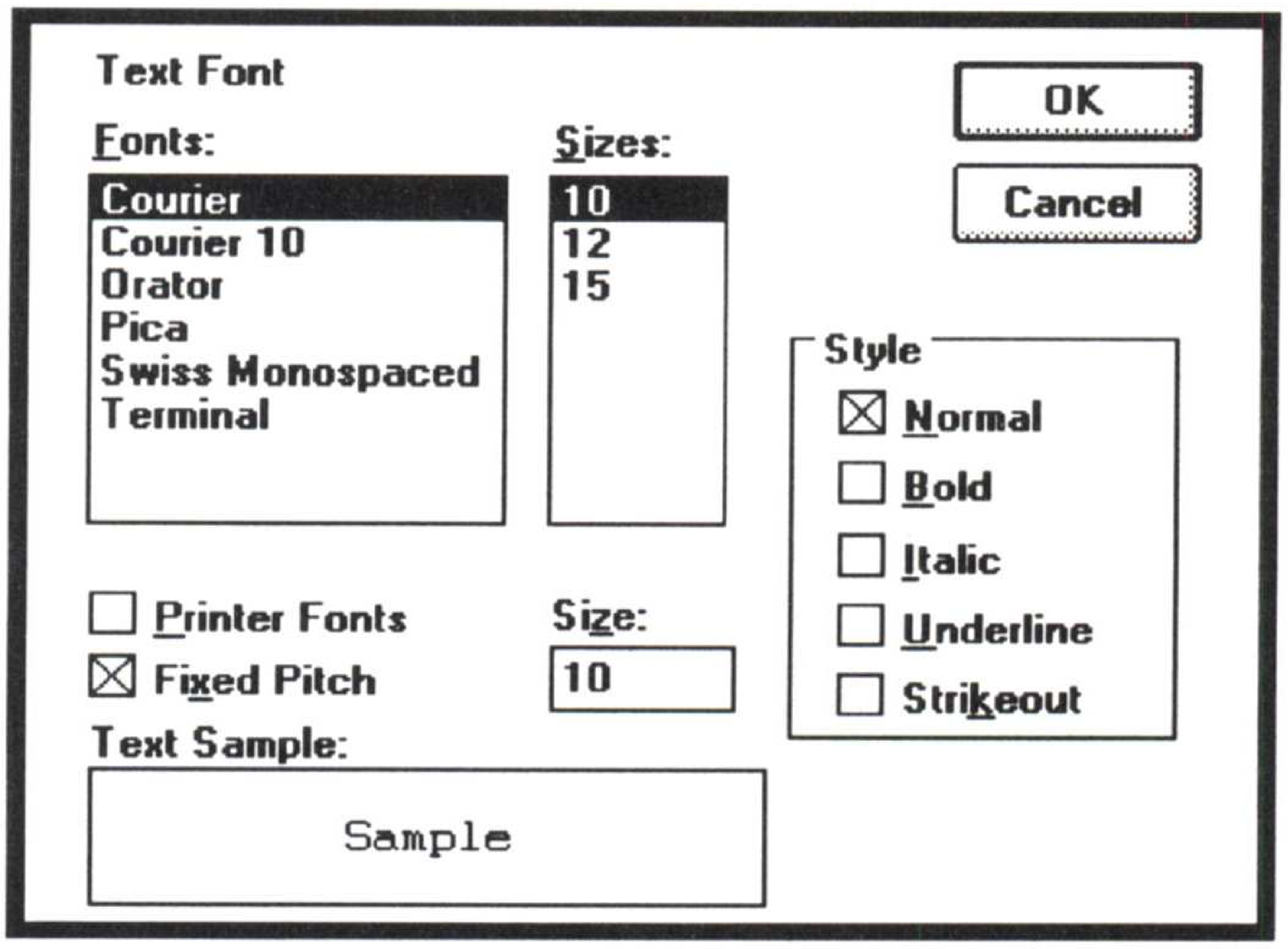
The Background Color colors the document's background.

Transparent

The Transparent option makes the background of the document transparent. The object or screen color directly behind this document object shows through.

Font... (F6)

The Font command changes the font type, size, and style in the document. Use the Text Font dialog box to select new fonts.



Text Font

Fonts:
- Courier
- Courier 10
- Orator
- Pica
- Swiss Monospaced
- Terminal

Sizes:
- 10
- 12
- 15

☐ Printer Fonts
☒ Fixed Pitch

Size: 10

Text Sample: Sample

Style
- ☒ Normal
- ☐ Bold
- ☐ Italic
- ☐ Underline
- ☐ Strikeout

Figure 3-7 Text Font Dialog Box

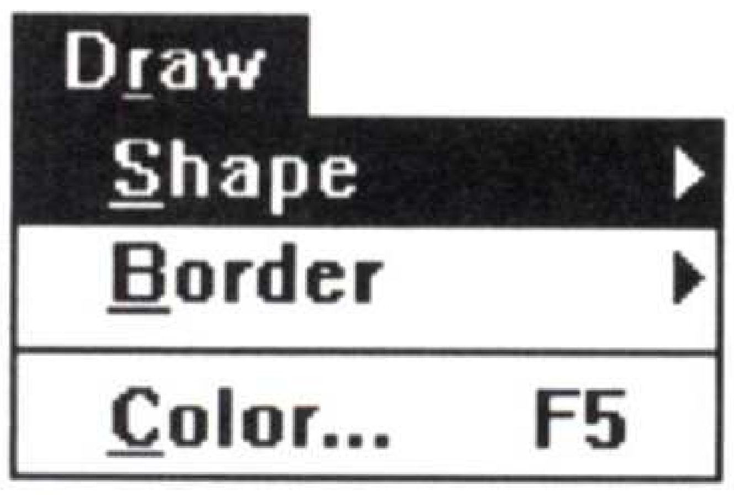
For information about this dialog box, see the Text Font command in *Chapter 9: Text Menu*.

***

Chapter 4

Draw Menu

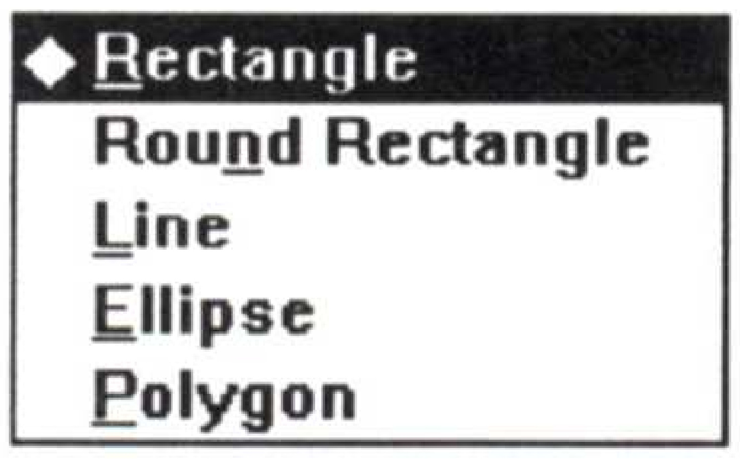
The Draw Menu



Use the Draw menu to add solid and outlined shapes to the screen. To create draw objects that snap to the current grid settings, press CTRL and drag or click the mouse when creating the object. You can also use the View Grid command to display a grid and turn on the Grid Snap option for a longer period of time.

Shape

The Shape command displays a cascading menu with commands for choosing a draw object's shape. You cannot change the type of shape.



Rectangle

The Rectangle command draws a rectangle.

Round Rectangle

The Round Rectangle command draws a rectangle with rounded corners.

Line

The Line command draws a line in any direction. The first place you click begins the line and the second place you click ends the line.

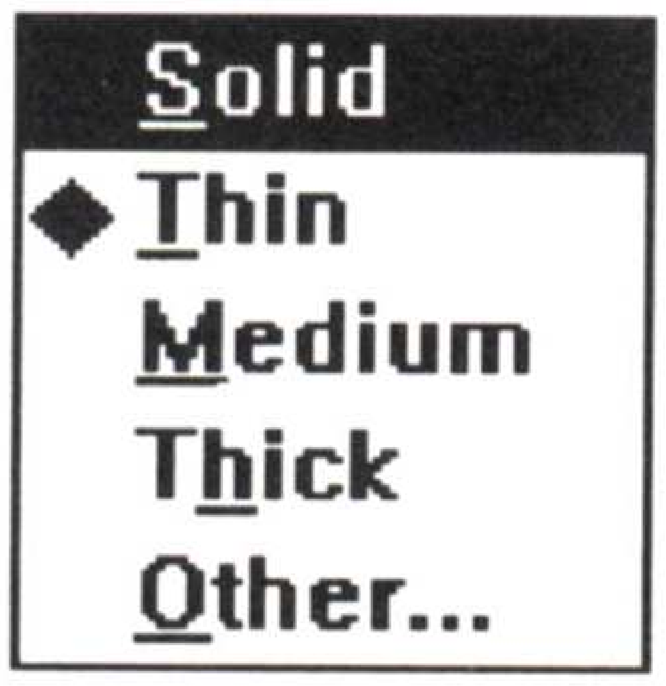
Ellipse

The Ellipse command draws an ellipse.

Polygon

The Polygon command draws a multisided closed figure. The first place you click begins the polygon and the last place you double-click closes the polygon. If the last point does not intersect with the first point, LightShip draws an extra line to close the polygon.

Border



The Border command displays a cascading menu with commands for specifying a solid or outlined shape. If you outline a shape or if the shape is a line, you can also specify the line-thickness.

You can change an object's border at any time. If you change a shape from solid to outlined, the outline takes on the color that you specified for the solid color. Any object or color behind the outlined shape shows through.

Solid

The Solid command completely fills the draw object with the specified color.

Turn off Solid to change a solid shape to an outlined shape by choosing the Thin, Medium, Thick, or Other command.

Thin

The Thin command draws a shape with thin lines. A thin line has a width of two.

Medium

The Medium command draws a shape with medium lines. A medium line has a width of four.

Thick

The Thick command draws a shape with thick lines. A thick line has a width of six.

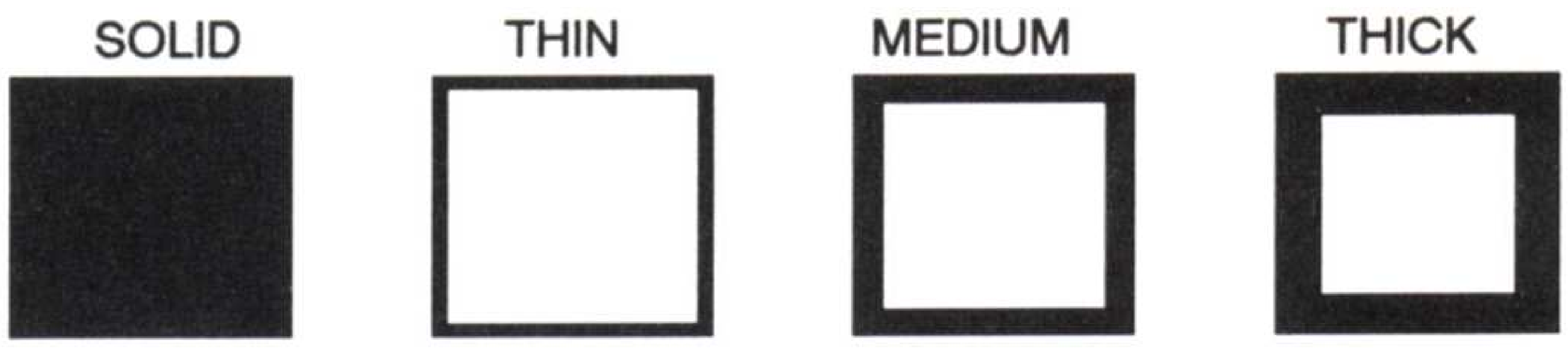
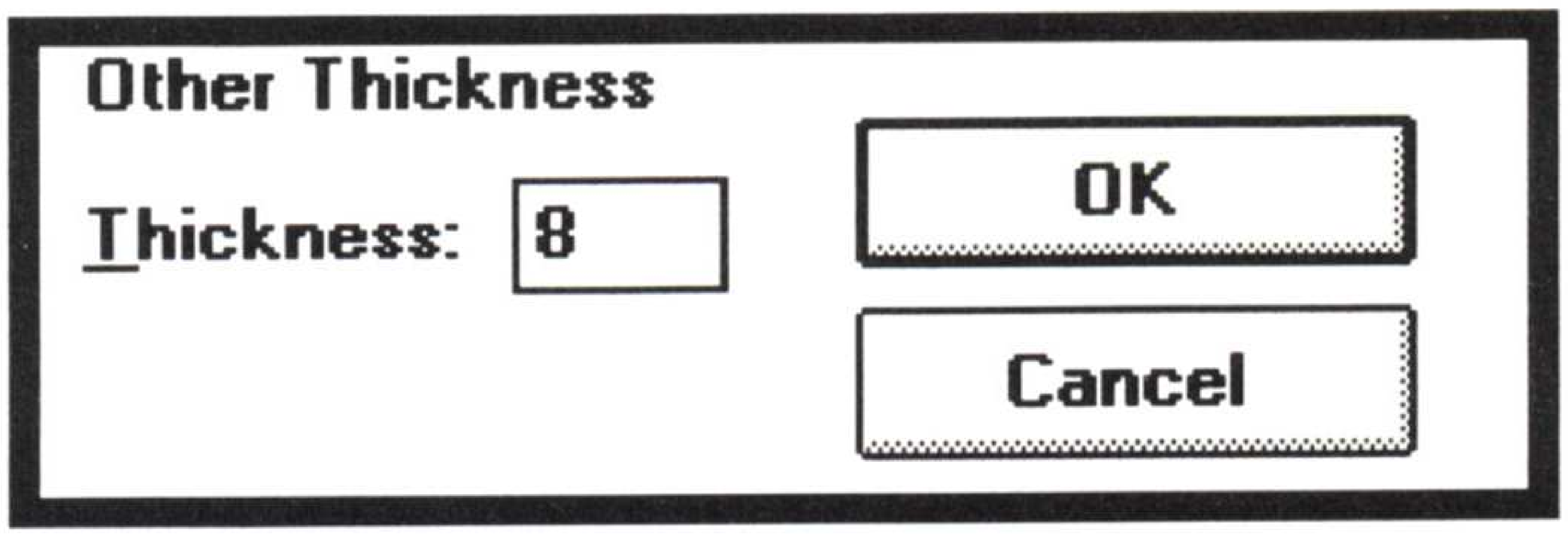


Figure 4-1 Borders

Other...

The Other command specifies a line width for any draw object that is a line or is outlined.

Use the Other Thickness dialog box to enter a line width when the Thin, Medium, and Thick widths are not appropriate. You can enter a number from one to 48 in the Thickness box.



Thickness: 8

Figure 4-2 Other Thickness Dialog Box

Color... (F5)

The Color command changes the color of the draw object. Use the Draw Color dialog box to select a new color.

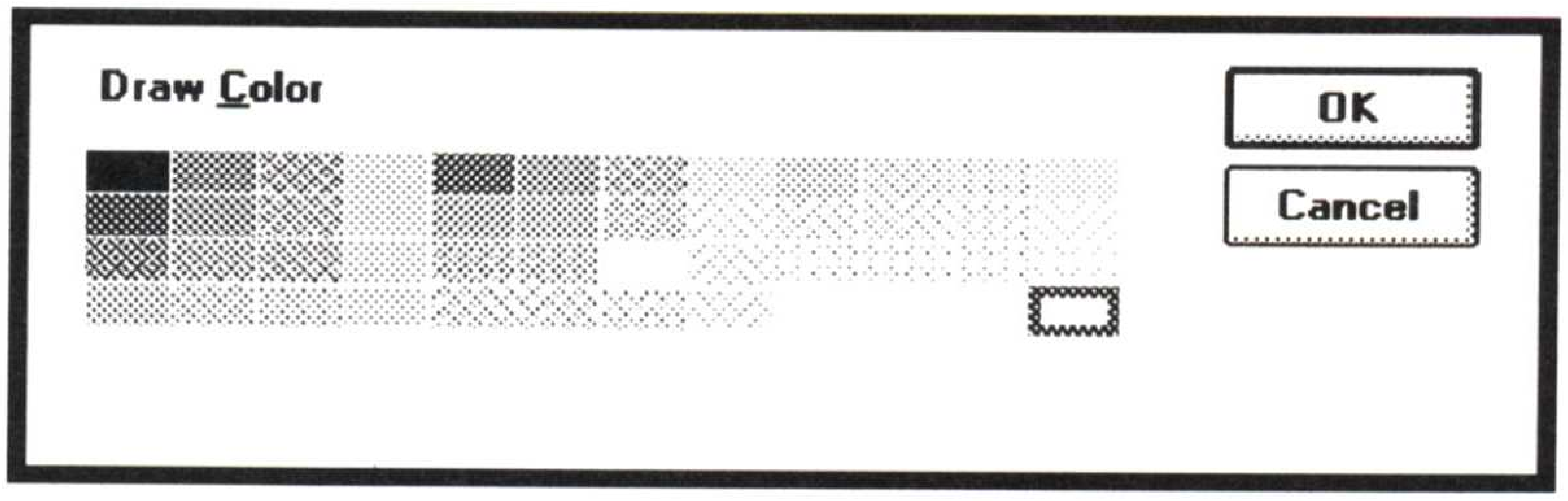


Figure 4-3 Draw Color Dialog Box

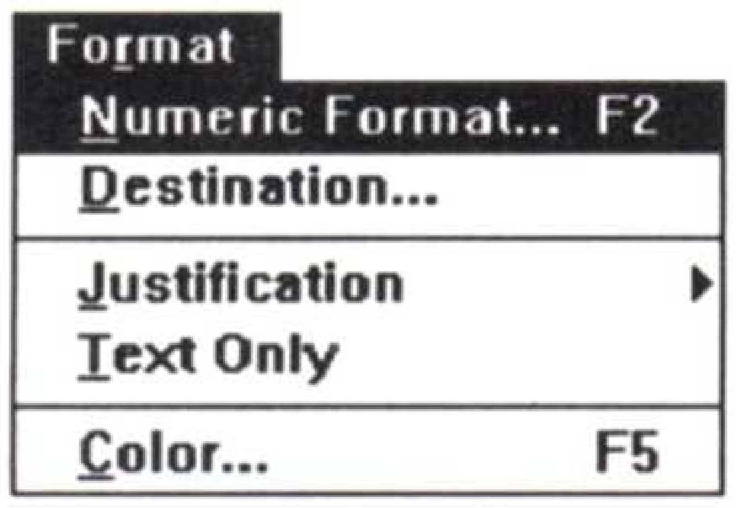
When you select a color for an outlined figure, only the outlines get colored; the enclosed area displays whatever is behind it.

* * *

Chapter 5

Format Menu

The Format Menu



Format objects affect documents that are in a column format (have Document Layout Columns turned on). Format objects can:

- Format and align data at any level
- Color data (or the entire format object) when certain numeric conditions exist
- Apply the NA and OUTNA values specified by the View Preferences command. This shows all unavailable (NA) data as one specified value. For information, refer to the View Preferences command in ***Chapter 1: The Menu Bar***.
- Use the column widths that you specified with the Document Column Delimiter Use Column Width command

Use the Format menu to select the data to be formatted and to assign formatting attributes. Although you cannot format the same data twice, you can assign multiple formats to different data in the same document.

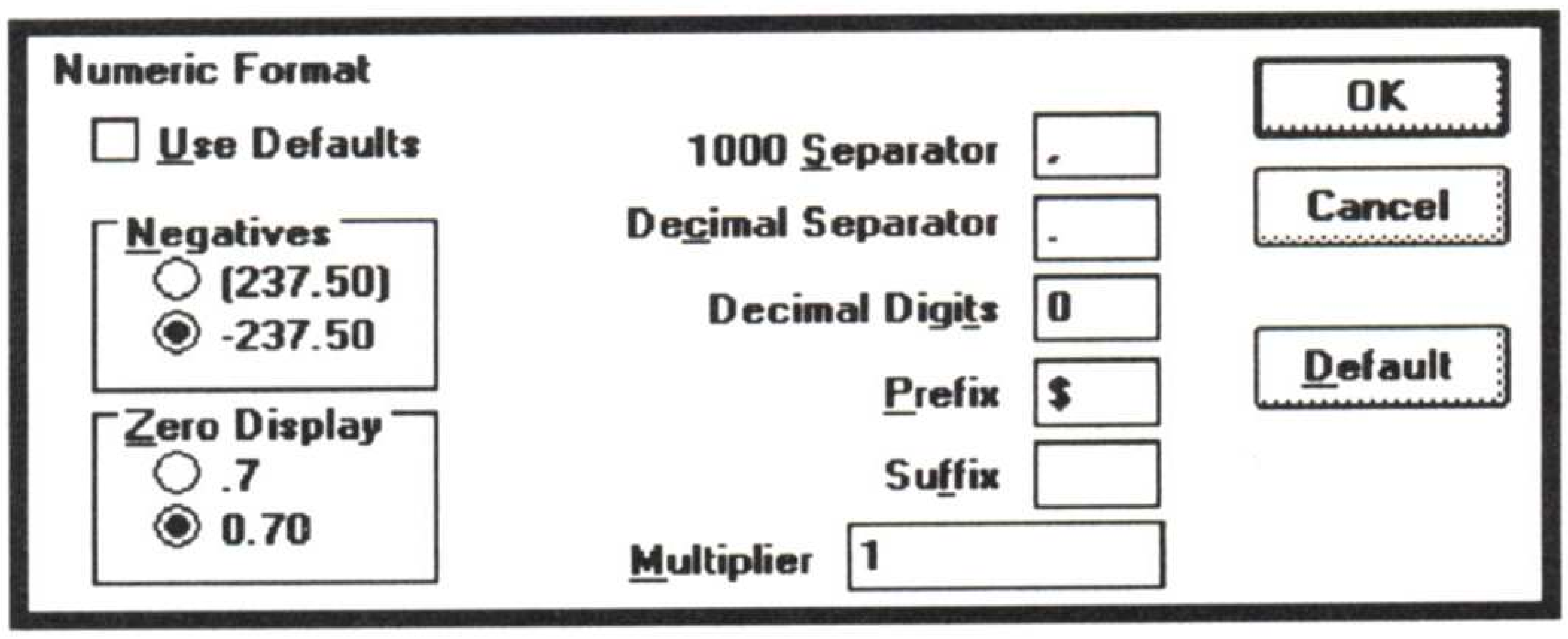
Format objects are not displayed. Use these View menu commands to affect format objects at the Author level:

- Show Hidden Objects shows a format object with the label "Format".
- Outline All Objects outlines a format object.
- Disable Formats makes a document object appear in its original state.

The data you select is called the destination data; it can be part of one or more documents or an entire document. You can select data individually or in a range of rows and columns.

Numeric Format...
(F2)

The Numeric Format command specifies the numeric display of the destination data. Use the Numeric Format dialog box to specify numeric format options.



☐ Use Defaults

Negatives
○ (237.50)
● -237.50

Zero Display
○ .7
● 0.70

1000 Separator ,
Decimal Separator .
Decimal Digits 0
Prefix $
Suffix
Multiplier 1

Figure 5-1 Numeric Format Dialog Box

Use Defaults

The Use Defaults option formats the destination data using the Country settings in the [intl] section of the WIN.INI file. These defaults are set up by the International icon on the Windows Control Panel. If you change the Country settings, the destination data automatically gets updated with the changes.

Turn off Use Defaults to use the settings from the Numeric Format dialog box.

Negatives

(237.50) displays negative numbers in parentheses. -237.50 displays negative numbers with a minus sign.

Zero Display

.7 removes leading and trailing zeros from decimal numbers. For example, 0.50 becomes .5. Spaces replace the zeros to ensure proper alignment in columns. 0.70 displays decimal numbers with leading and trailing zeros.

1000 Separator

The 1000 Separator box specifies the symbol for the 1000 mark. For example, type a comma (,) to display 10000 as 10,000.

Decimal Separator

The Decimal Separator box specifies the symbol for the decimal separator. For example, type a period (.) to display 10 as 10.0 (used with the Zero Display option.)

Decimal Digits

The Decimal Digits box specifies the number of decimal places to display. For example, type 4 to display four (.1234) decimal digits.

If this box is blank, LightShip uses General formatting. This places decimals as required by the data; numbers are not automatically aligned in a column.

Prefix

The Prefix box specifies the symbol to appear before the destination numbers. For example, enter **$**.

Suffix

The Suffix box specifies the symbol to appear after the destination numbers. For example, enter %.

Multiplier

The Multiplier box multiplies the destination data by the specified number. Use a multiplier to abbreviate large numbers or to display fractions as percentages. A multiplier displays the data differently, but does not change its value.

For example, to display 100,000 as 100K, type .001 as the multiplier in this box and enter a K (i.e., the thousand symbol) as a suffix.

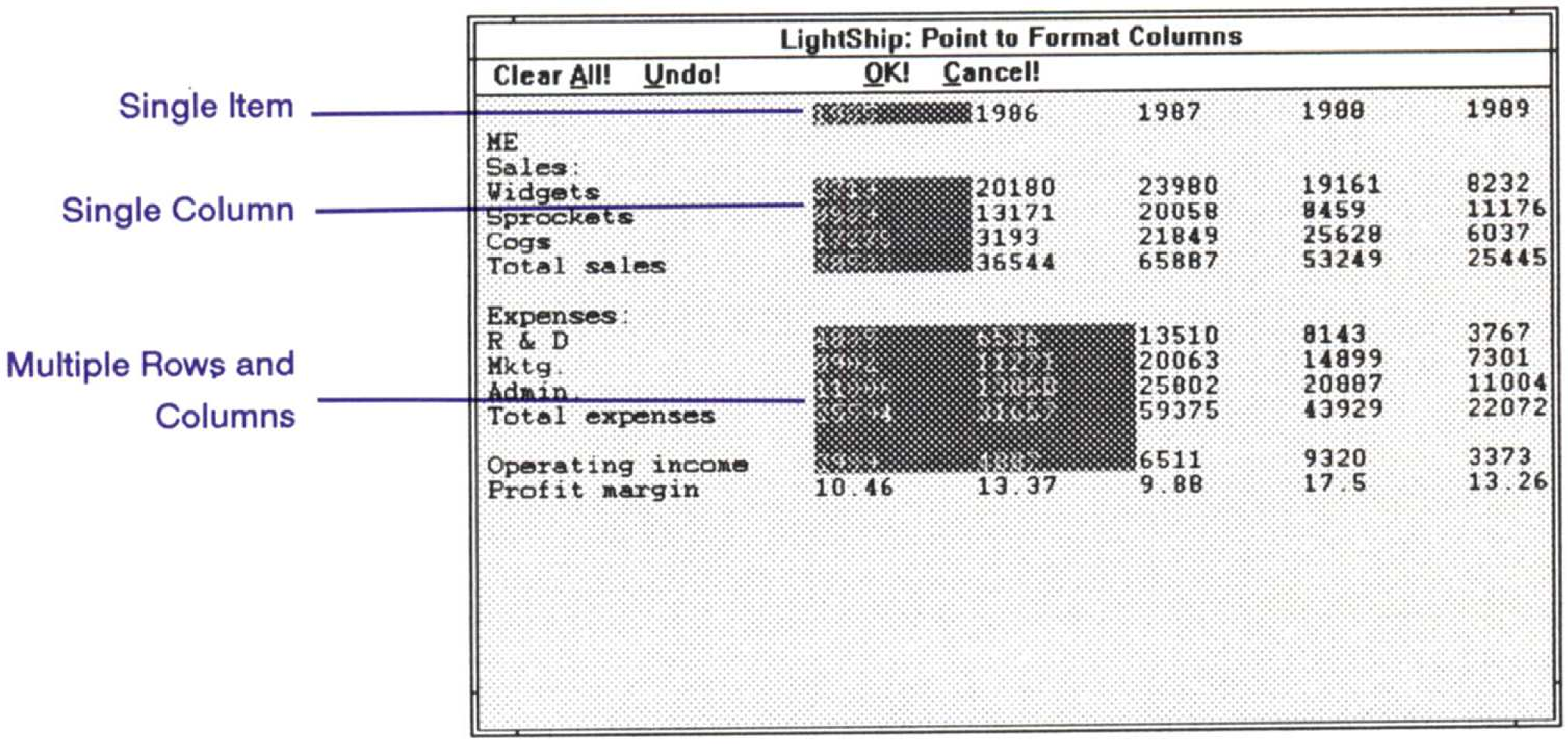
Default

The Default button resets the destination data to the Country settings in the [intl] section of the WIN.INI file. Whereas the Use Defaults option automatically updates the formatted data if the Country settings change, the Default option formats data only when you choose the Default button.

Destination...

The Destination command points to the document object data to be formatted with this format object's attributes. Use the Point mode screen to select the document object data.

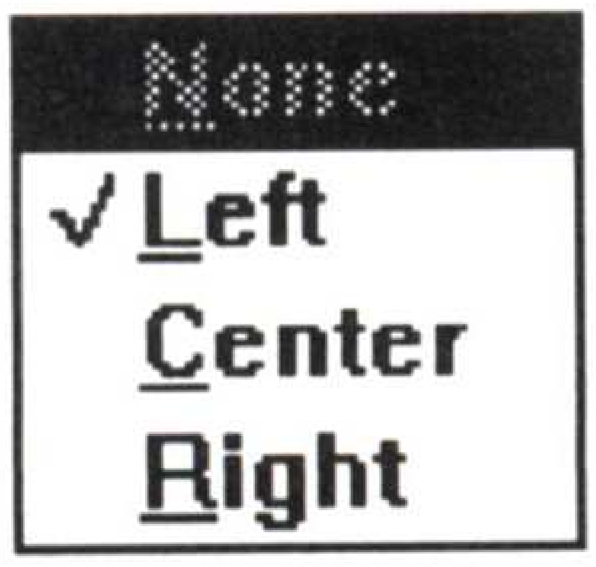
Figure 5-2 shows three data ranges selected for one format.



	[illegible]	1986	1987	1988	1989
ME					
Sales:					
Widgets	[illegible]	20180	23980	19161	8232
Sprockets	[illegible]	13171	20058	8459	11176
Cogs	[illegible]	3193	21849	25628	6037
Total sales	[illegible]	36544	65887	53249	25445
Expenses:					
R & D	[illegible]	[illegible]	13510	8143	3767
Mktg.	[illegible]	[illegible]	20063	14899	7301
Admin.	[illegible]	[illegible]	25802	20887	11004
Total expenses	[illegible]	[illegible]	59375	43929	22072
Operating income	[illegible]	[illegible]	6511	9320	3373
Profit margin	10.46	13.37	9.88	17.5	13.26

Figure 5-2 Selection Ranges in a Point Mode Screen

Justification



The Justification command displays a cascading menu with commands for specifying the layout of the destination data.

None

The None command removes justification from the destination data that is formatted with the Text Only command. Use None to retain alignment when you are conditionally coloring text in a document.

Left

The Left command justifies the destination data to the left of the column.

Center

The Center command justifies the destination data to the center of the column.

Right

The Right command justifies the destination data to the right of the column.

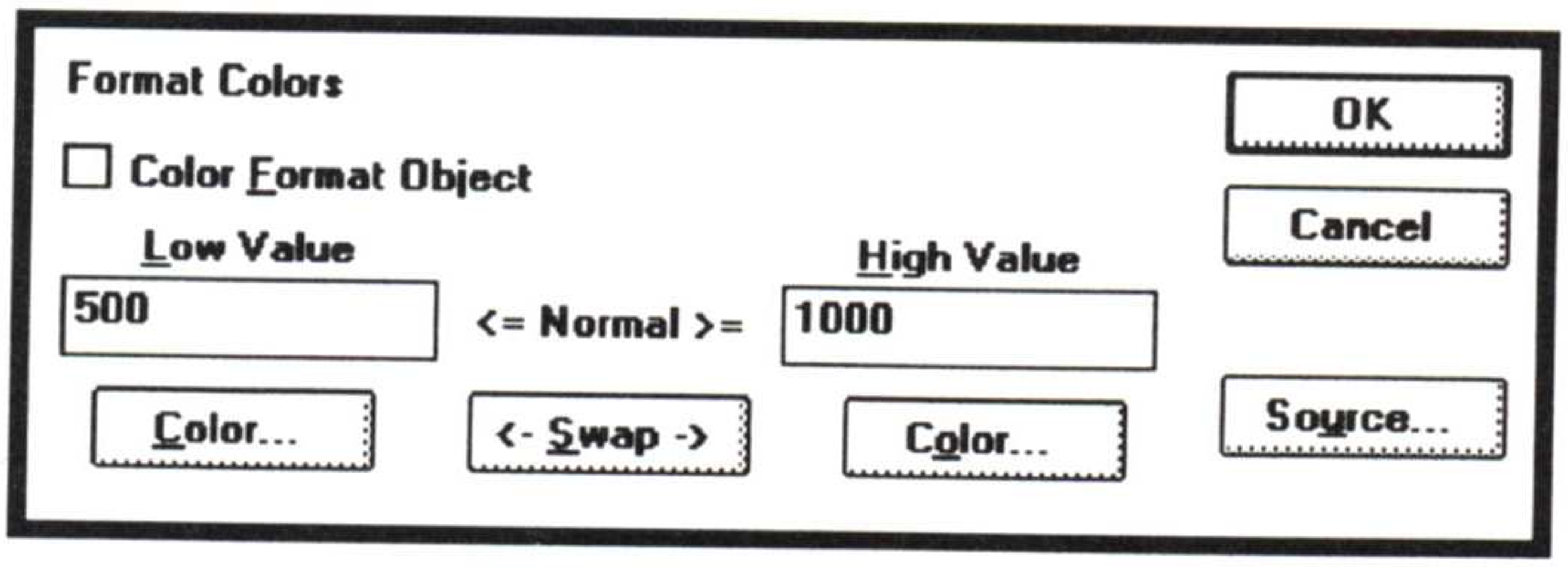
Text Only

The Text Only command turns off numeric formatting and justifies the text of the destination data.

Color... (F5)

The Color command specifies the conditions on which to color the variances in data. *Variances* are numbers that you define to be exceptions.

Use the Format Colors dialog box to assign colors and the conditions for coloring data. LightShip colors the data and possibly the format objects if the specified conditions are met; otherwise, LightShip does not color data.



Format Colors

☐ Color Format Object

Low Value: 500 <= Normal >= High Value: 1000

Figure 5-3 Format Colors Dialog Box

Color Format Object

The Color Format Object option colors the format object using the text color of the condition that is true. A colored format object covers up any item behind it. If the condition is not true, the format object remains transparent. For examples of the Color Format Object option, refer to the *LightShip User's Guide*.

Low Value

The Low Value box specifies that any destination data that is less than or equal to this low value number will be colored with the low value color. You can change the low value color using the Color button.

Color...

The Color button colors the low value data with the specified color. Use the Low Value Foreground Color dialog box to select a text and background color.

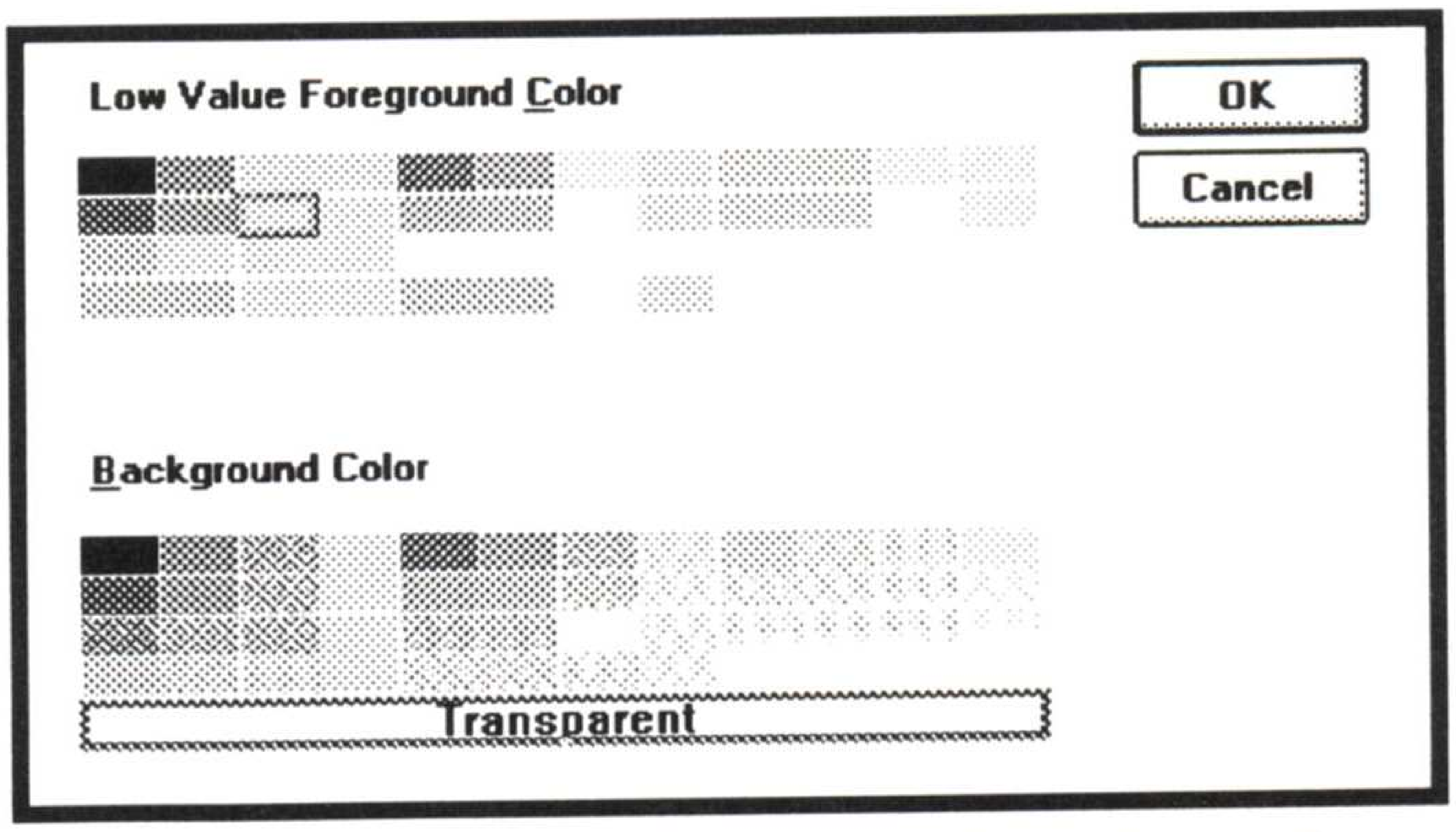


Figure 5-4 Low Value Foreground Color Dialog Box

Foreground Color

The Foreground color selection colors the text of the destination data that meets the low value condition.

Background color

The Background color selection colors the background of the destination data that meets the low value condition.

Transparent

The Transparent option makes the background clear and displays whatever is behind it.

<- Swap ->

The Swap option switches the low value color with the high value color.

High Value

The High Value box specifies that any destination data that is greater than or equal to this high value number will be colored with the high value color.

Choose the Color button to select a high value color. For information on the high value's Color button, refer to the low value's Color button. They perform in the same manner.

Source...

Normally, LightShip colors data by comparing the destination data to the low and high values. The Source button points to a different range of data to compare against the low and high values. This is called the *source data*, and it can exist within the same document object or a different document object. Based on the source data's low and high values, LightShip decides how to color the numbers in the destination data.

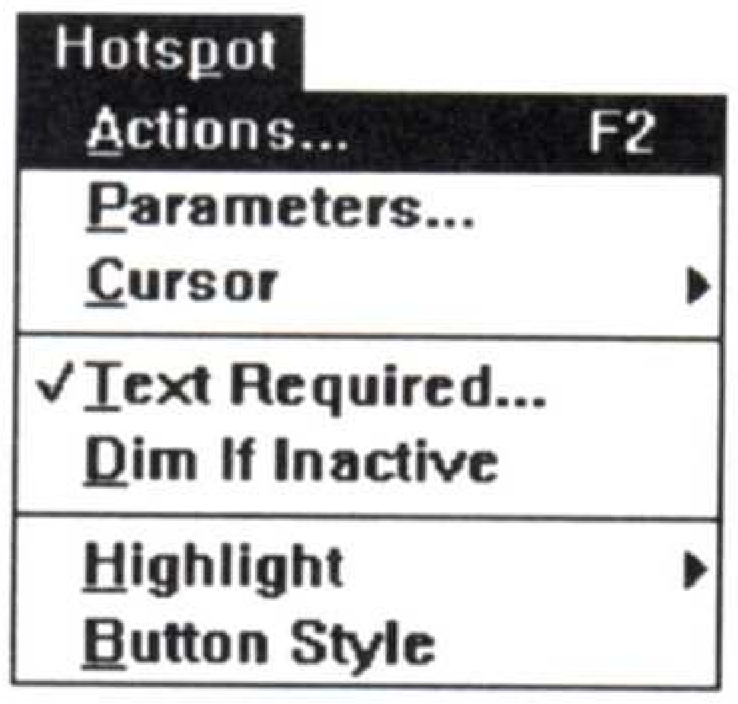
If you do not choose the same amount of source data and destination data, the extra data will not be used (or the extra destination numbers will not be colored).

* * *

Chapter 6

Hotspot Menu

The Hotspot Menu



A hotspot object can set up to 20 parameters and execute up to 250 actions when you click on it at the Browse or Capture level. Use the Hotspot menu to add actions, parameters, and button and highlight styles. You can also make a hotspot available based on the condition that certain document object data exists in a specified position on the screen.

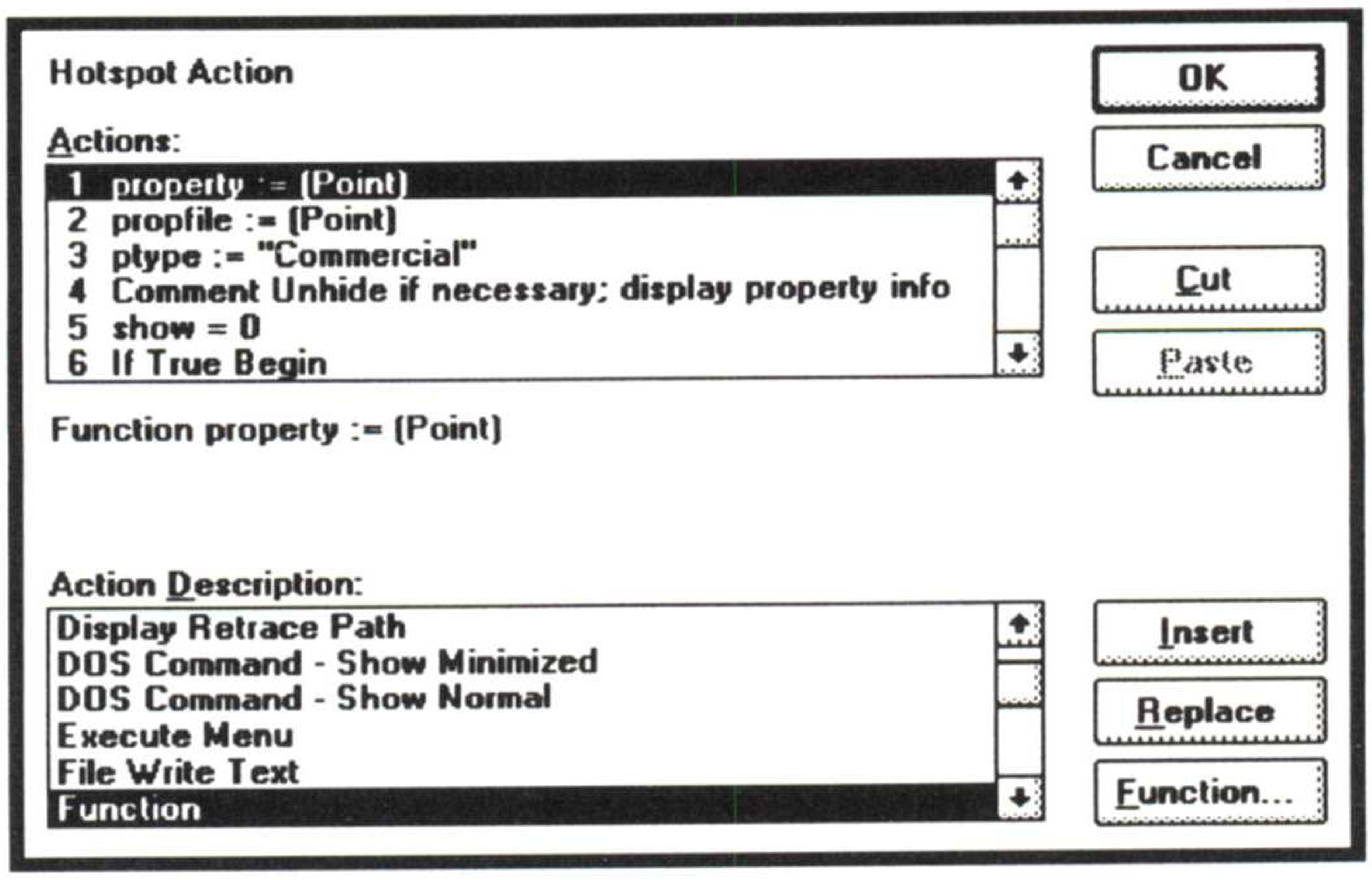
Hotspot objects are not displayed at any level unless you choose a Highlight command or the Button Style command. These commands can make hotspots turn on and off and look like check boxes, push buttons, and option buttons.

Use the View Outline Hotspots or View Outline All Objects commands to display hotspots with a dotted line. You can place non-displayed hotspots on any object, such as an image, to identify its position at the Browse level.

Actions... (F2)

The Actions command specifies the actions and functions for this hotspot to carry out.

Use the Hotspot Action dialog box to select the actions for this hotspot object. For information about this dialog box, refer to *Chapter 10: Actions*.



Hotspot Action

Actions:

1 property := (Point)
2 propfile := (Point)
3 ptype := "Commercial"
4 Comment Unhide if necessary; display property info
5 show = 0
6 If True Begin

Function property := (Point)

Action Description:

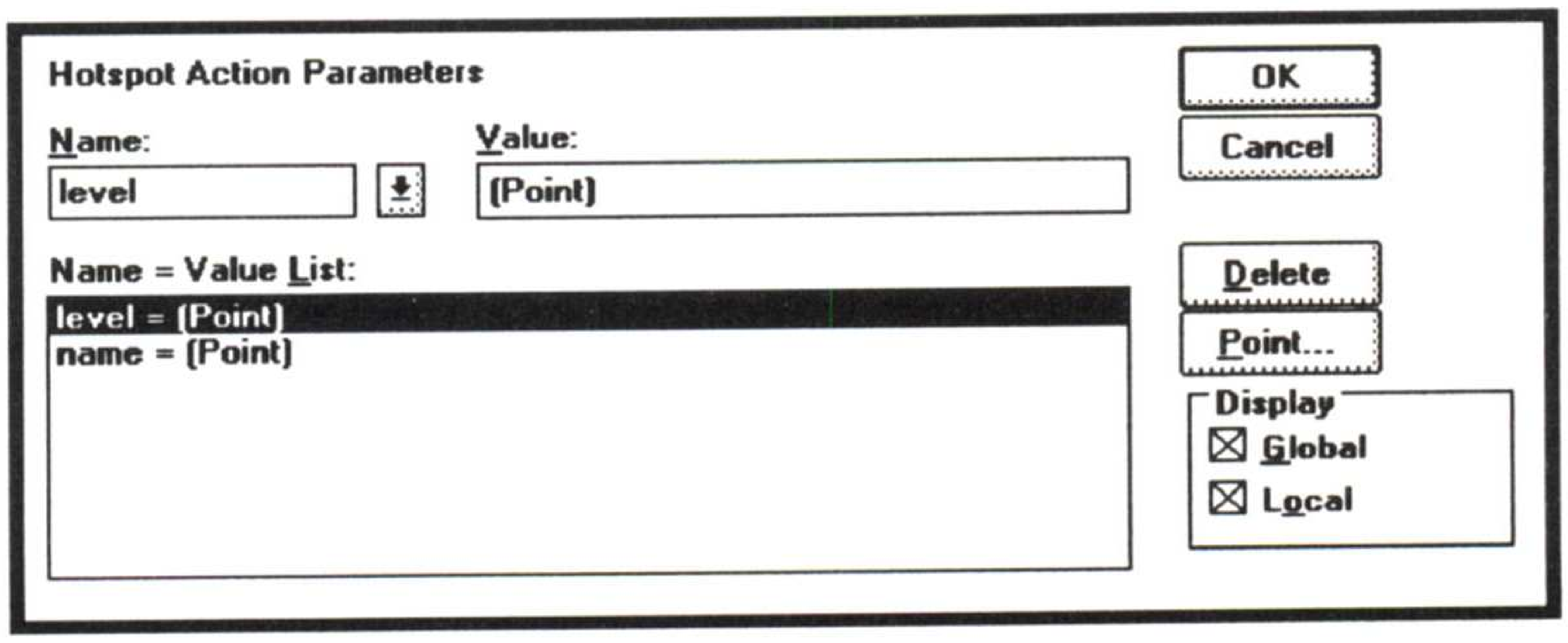
Display Retrace Path
DOS Command - Show Minimized
DOS Command - Show Normal
Execute Menu
File Write Text
Function

Figure 6-1 Hotspot Action Dialog Box

Important For the *Function* actions MOUSETEXT, MOUSEROW, and MOUSECOLUMN, a hotspot must lie directly in front of the document object. It must be exactly the same size as the document object or one pixel smaller. For more information about these *Function* actions, refer to *Chapter 10: Actions*.

Parameters... The Parameters command assigns values to variables when you click on the hotspot at the Browse or Capture level. The variable becomes a parameter when its value changes.

Use the Hotspot Action Parameters dialog box to add parameter names and values.



Hotspot Action Parameters

Name: level

Value: (Point)

Name = Value List:

level = (Point)
name = (Point)

Display
☒ Global
☒ Local

Figure 6-2 Hotspot Action Parameters Dialog Box

You can pass local and global hotspot parameters to other screens; during an Open File action or the ***Return in Retrace Path*** action, a hotspot's parameters get passed to the screen you open (and override other parameter or variable values of the same name).

As an exception, if the screen you are opening contains an &&Open menu object that sets parameters with the same name that you are passing, the &&Open parameters take precedence over the passed parameters.

Name

The Name box specifies the parameter name. In the text box, enter a new parameter name of up to 20 characters or edit the current name. Use the arrow next to the Name text box to select from a drop-down list of current parameter names.

Press TAB to move to the Value box.

Value

The Value box specifies the parameter value. In the text box, enter a new parameter value of up to 4,000 characters or edit the current value.

A value can be a container for multiple values in a row and column structure. To delimit the values in a row with TAB characters, press CTRL+TAB between each value. To delimit one row from another, press CTRL+ENTER at the end of a row. Press SHIFT+TAB to move back to the Value box, if necessary.

Name = Value List

The Name = Value List box lists the parameter names and values for this hotspot object. When you select a parameter from the list box, its contents appear in the Name and Value boxes so that you can edit or delete it.

Delete

The Delete button removes the parameter assignment from this dialog box but leaves the variable intact in the Special Variables dialog box. To delete the variable, refer to the Special Variables command in *Chapter 1: The Menu Bar*.

Point...

The Point button assigns document object data to a parameter value. Use the Point mode screen to select the data. The parameter value appears as (Point).

Refer to Chapter 10 of the *LightShip User's Guide* for information about assigning values by pointing.

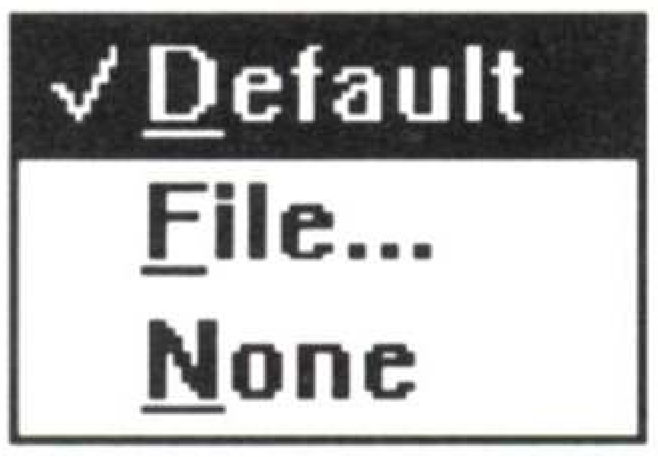
Display Global

The Display Global button displays global parameters in the Name = Value List box.

Display Local

The Display Local button displays local parameters in the Name = Value List box.

Cursor



The Cursor command displays a cascading menu with commands for specifying the type of cursor to display over hotspots at the Browse and Capture levels. You can use a default cursor, use your own cursor, or use no cursor other than the pointer.

Each hotspot on the screen can use a different hotspot cursor.

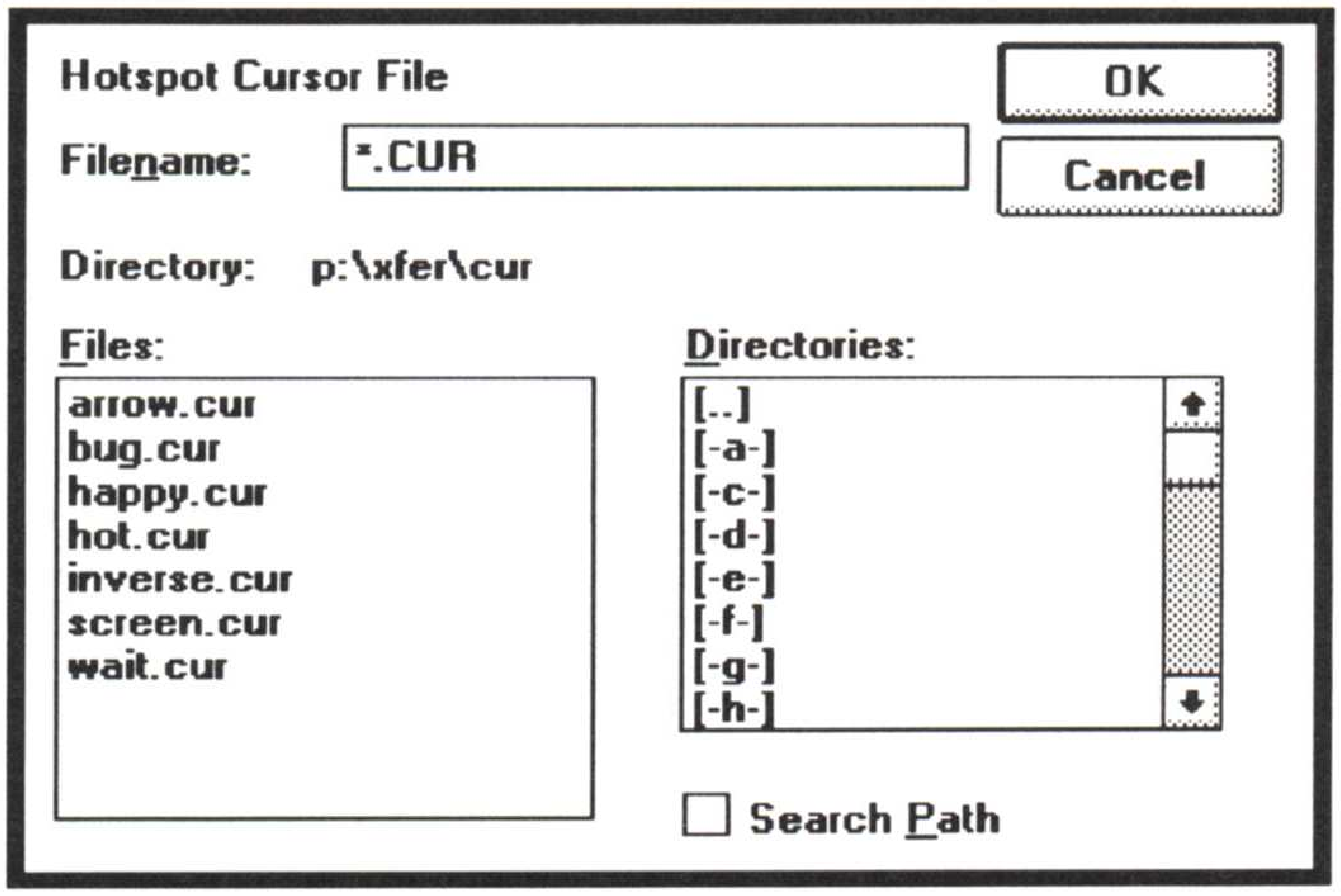
Default

The Default command uses the cursor file specified with the View Preferences command. If you specify no default cursor with that command, the default cursor is the LightShip hand cursor.

File

The File command specifies a cursor file for this hotspot other than the default cursor file. It must be a 32 x 32 monochrome bitmap that conforms to the Windows 3.0 Cursor Resource File format.

Use the Hotspot Cursor File dialog box to specify the .CUR file to use.



Hotspot Cursor File

Filename: *.CUR

Directory: p:\xfer\cur

Files:

- arrow.cur
- bug.cur
- happy.cur
- hot.cur
- inverse.cur
- screen.cur
- wait.cur

Directories:

- [..]
- [-a-]
- [-c-]
- [-d-]
- [-e-]
- [-f-]
- [-g-]
- [-h-]

☐ Search Path

Figure 6-3 Hotspot Cursor File Dialog Box

For information about the options and text boxes in this dialog box, refer to the File Open command in *Chapter 1: The Menu Bar*.

None

The None command uses no hotspot cursor other than the pointer.

Text Required...

The Text Required command turns on a hotspot only if certain document object data exists in a specified position on the screen. When you point to an inactive hotspot at the Browse level, the cursor does not change to the hotspot cursor and no actions are executed.

Use the Point mode screen to select multiple cells and up to three separate cell ranges from document objects. The existence of this data activates the hotspot. If this data becomes unavailable (e.g., it is deleted or scrolls off the window), the hotspot does not perform any actions.

You can choose Dim If Inactive to dim the hotspot when it is disabled.

For more information about using Text Required, refer to Chapter 8 of the *LightShip User's Guide*.

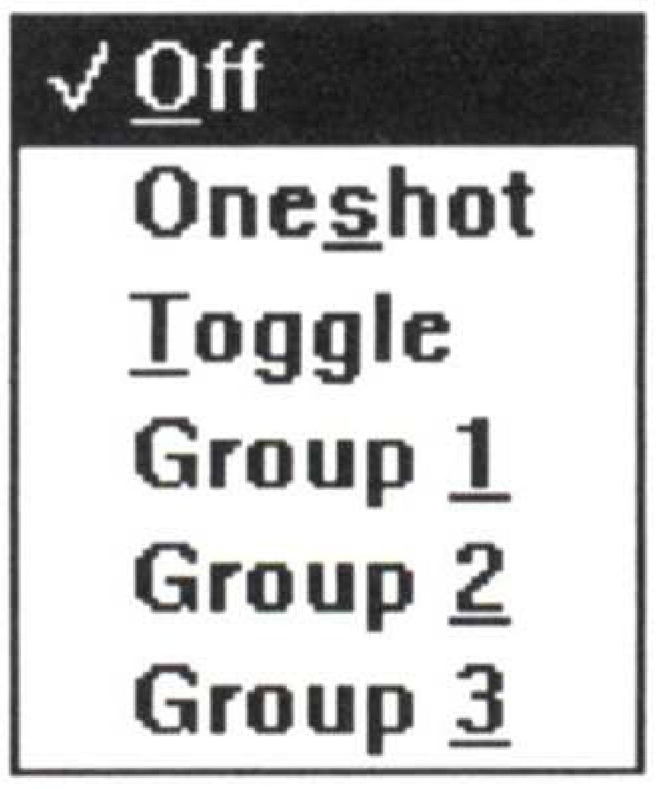
Dim If Inactive

The Dim If Inactive command makes a hotspot unavailable when its Text Required conditions are not met.

For non-displayed hotspots, it dims any object behind the hotspot. For Button Style hotspots, it completely removes the display of the hotspot. You must choose Text Required before choosing Dim If Inactive.

Highlight

The Highlight command displays a cascading menu with commands for selecting the on/off style of the hotspot.



Off

The Off command enables you to select this hotspot any number of times during a session without its appearance changing.

Used with the Button Style command, a hotspot whose highlight is off appears as a push button.

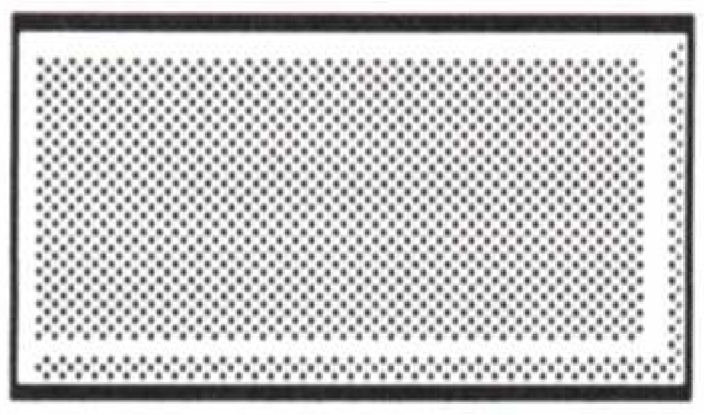


Figure 6-4 Button-Style Push Button

Oneshot

The Oneshot command enables you to carry out a hotspot's actions only once in the session. After selecting this hotspot once, any object that is behind the hotspot is dimmed to show that the hotspot is turned off.

You cannot use Oneshot with a button-style hotspot.

Toggle

The Toggle command enables you to carry out a hotspot's actions any number of times, while making the hotspot appear to turn on and off each time you select it. Click on the hotspot to dim it; click again to display it correctly.

Used with Button Style, a toggle hotspot looks like a check box that turns on and off when you check it on and off.

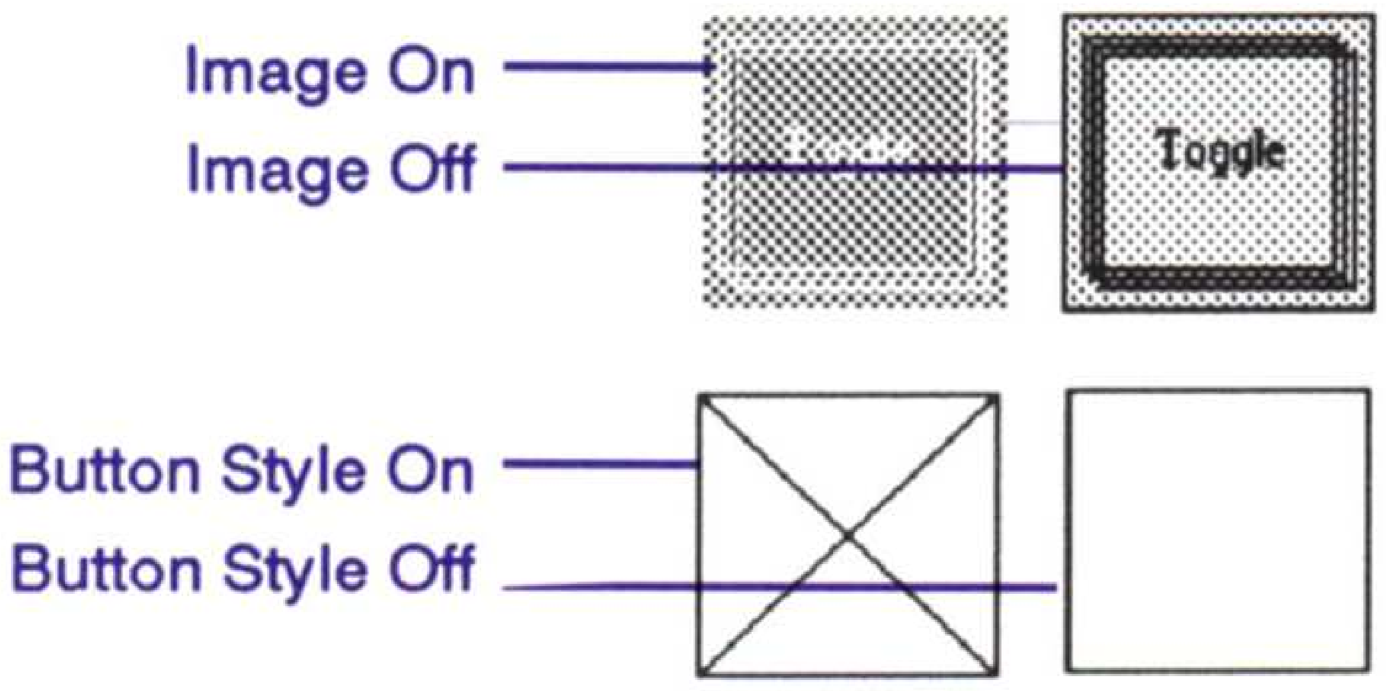


Figure 6-5 Toggle and Check Boxes

Group 1
Group 2
Group 3

The Group 1 command groups this hotspot into a toggle group with other hotspots that have this command selected. While one hotspot in the group is turned on, the others are turned off.

All the hotspots in this group must have the same group number selected. You can create three groups using Group 1, Group 2, and Group 3; they all work the same way.

Used with Button Style, grouped hotspots appear as option buttons where only one button is on at a time.

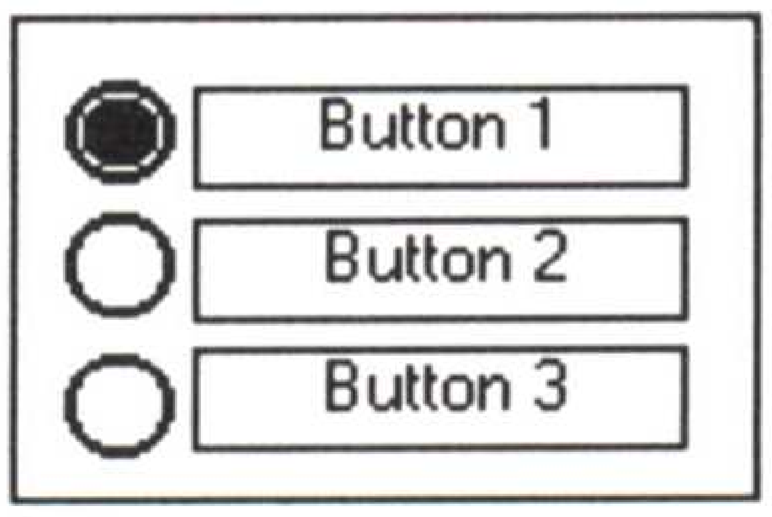


Figure 6-6 Button-Style Group Hotspots

Button Style

The Button Style command makes a hotspot appear as a push button, option button, or a check box depending on the Highlight command you choose.

Without a button style, you can use highlights and provide your own image to display on the hotspot.

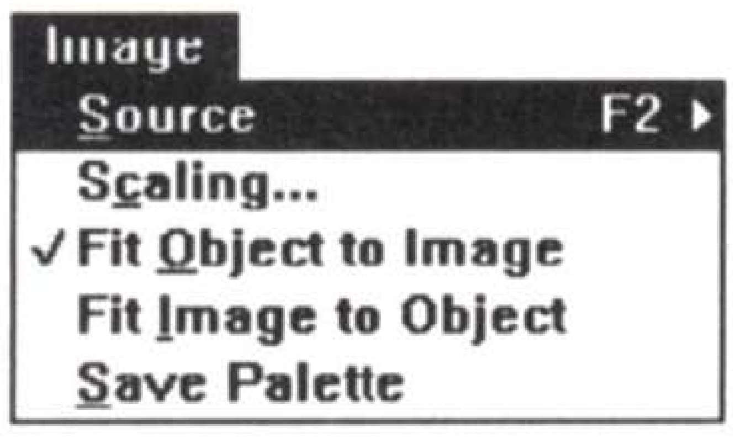
Button Style hotspots that use the Text Required and Dim If Inactive commands are not displayed when the required conditions are not met.

* * *

Chapter 7

Image Menu

The Image Menu



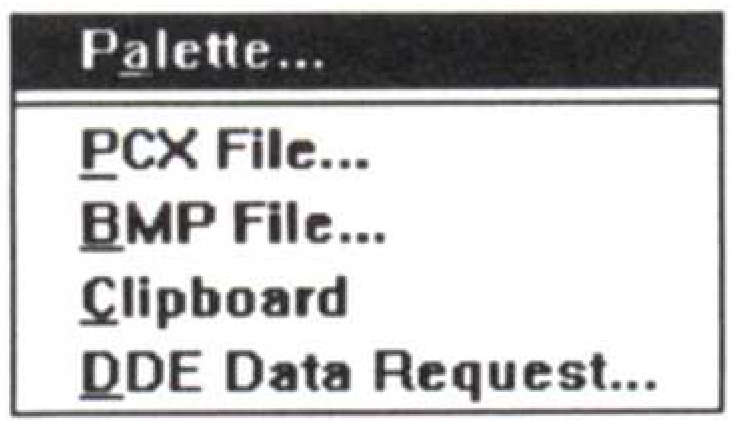
Use the Image menu to add an image on the screen from any of these sources:

- A file in PCX format
- A file in BMP format, which is created by Windows Paint
- The Clipboard, which supports a CF_DIB format, a CF_BITMAP format, and any CF_PALETTE information
- A server application that supports a DDE Request and conforms to the CF_BITMAP format

You can change the size of the image, the object, or the image and the object together. You also change the palette of colors represented in the image.

LightShip always displays the most current image in an image object whenever you open a screen. LightShip also reissues a request for the image from its source at other times. For more information about when images are updated, see the Special Calculation command in *Chapter 1: The Menu Bar*.

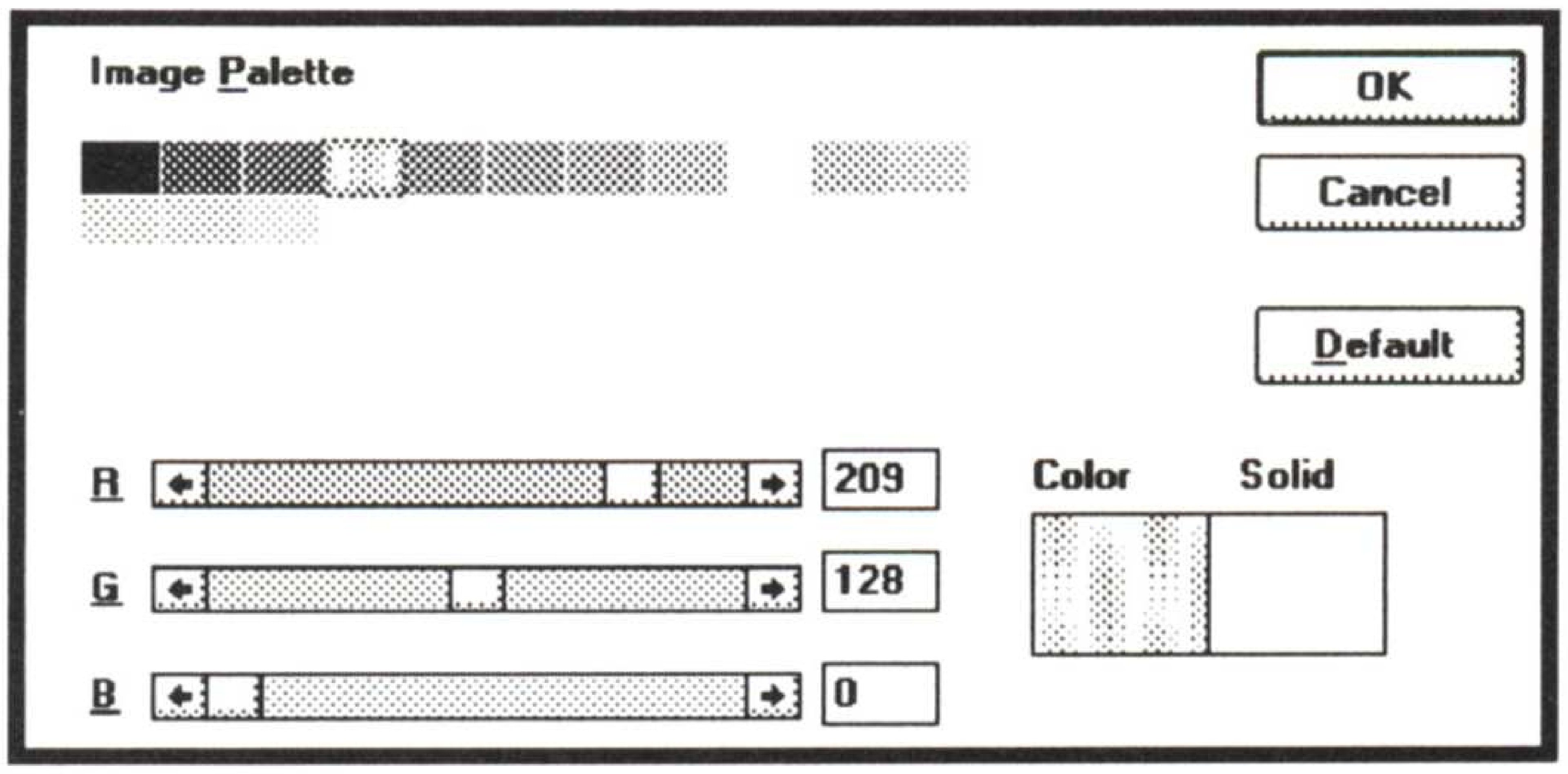
Source (F2)



The Source command displays a cascading menu with commands for choosing the source of the image.

Palette

The Palette command changes an image's palette of colors and saves the new colors with the screen. The original colors are saved with the source file when you turn on Save Palette. Use the Image Palette dialog box to change the image's colors.



R: 209
G: 128
B: 0

Figure 7-1 Image Palette Dialog Box

When you display an image, LightShip attempts to match each color to a color on the palette. If the color is not on the palette, LightShip adds it. If the palette is full, LightShip uses the nearest color.

For information about the options in the Image Palette dialog box, refer to the Options Palette command in *Chapter 1: The Menu Bar*.

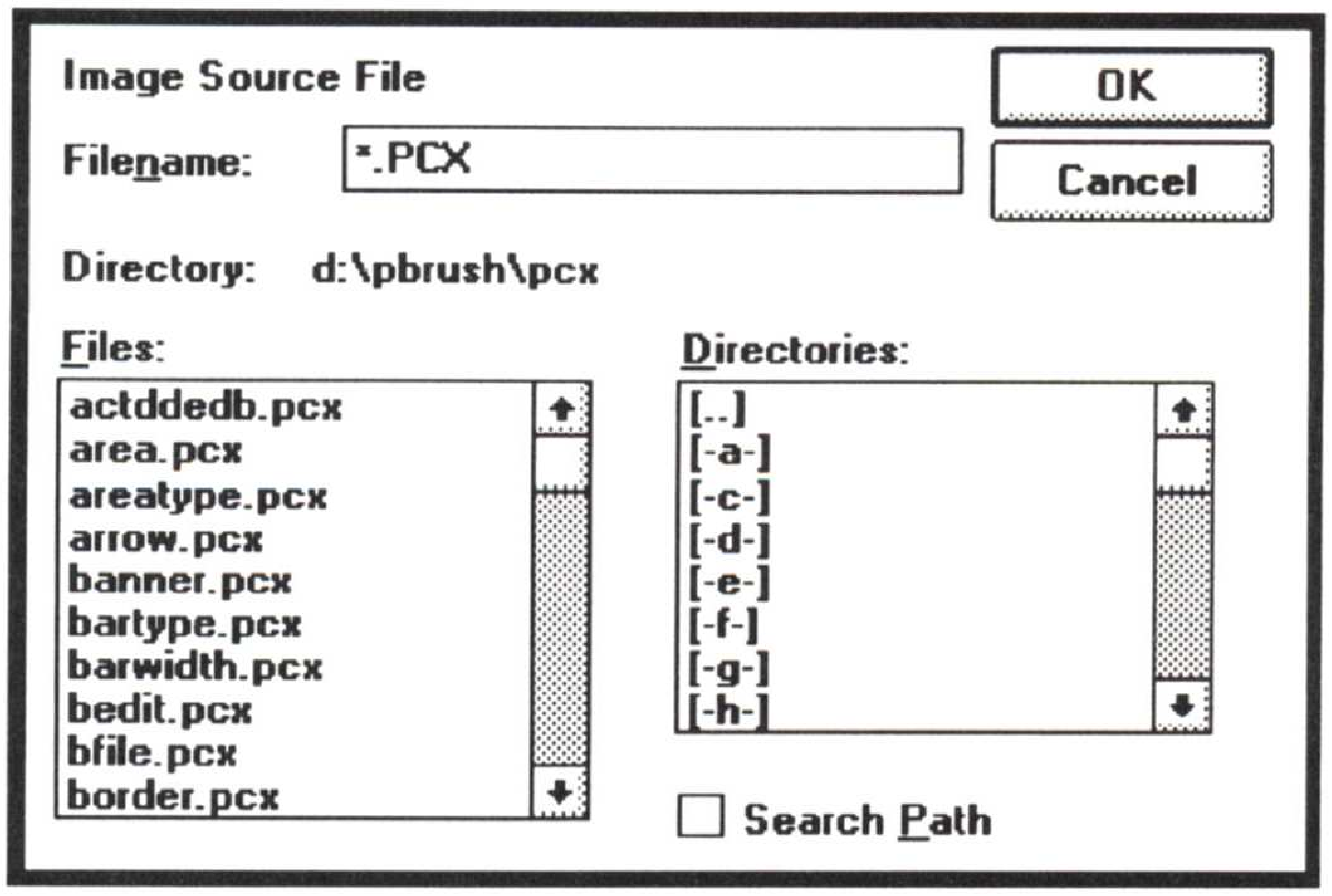
Default

The Default button returns the image's palette to the colors that existed when you opened the Image Palette dialog box.

To return to the original palette, turn off Save Palette and choose OK when LightShip asks you if it is "OK to delete save palette?"

PCX File

The PCX File command displays an image from a PCX file. Use the Image Source File dialog box to select the file.



Filename: *.PCX

Directory: d:\pbrush\pcx

Figure 7-2 Image Source File Dialog Box

For information about the options and text boxes in this dialog box, refer to the File Open command in *Chapter 1: The Menu Bar*.

BMP File

The BMP File command displays an image from a BMP file. Use the Image Source File dialog box to select the file.

For information about the options in this dialog box, see the File Open command in *Chapter 1: The Menu Bar*.

Clipboard

The Clipboard command displays the object that is currently on the Clipboard. The Clipboard contains the last item that was cut or copied from a Windows application during this session. If there are no images currently on the Clipboard, this command is unavailable.

When using the Clipboard as an image source, LightShip looks for a CF_DIB format first and then for a CF_BITMAP format. The CF_DIB (device-independent bitmap) format brings its own palette. The CF_BITMAP format brings any CF_PALETTE information, if there is any on the Clipboard.

LightShip saves a static copy of the Clipboard image with the screen; therefore, Clipboard images are painted on the screen much quicker than other images.

You cannot access a Clipboard image dynamically as you can with an image from a DDE Data Request, a BMP file, or a PCX file.

DDE Data Request

The DDE Data Request command displays an image from an application that supports a DDE Request of bitmap data. For example, you can display an Excel chart as an image. Use the Image DDE Data Request dialog box to specify the application, topic, and item of the server application.

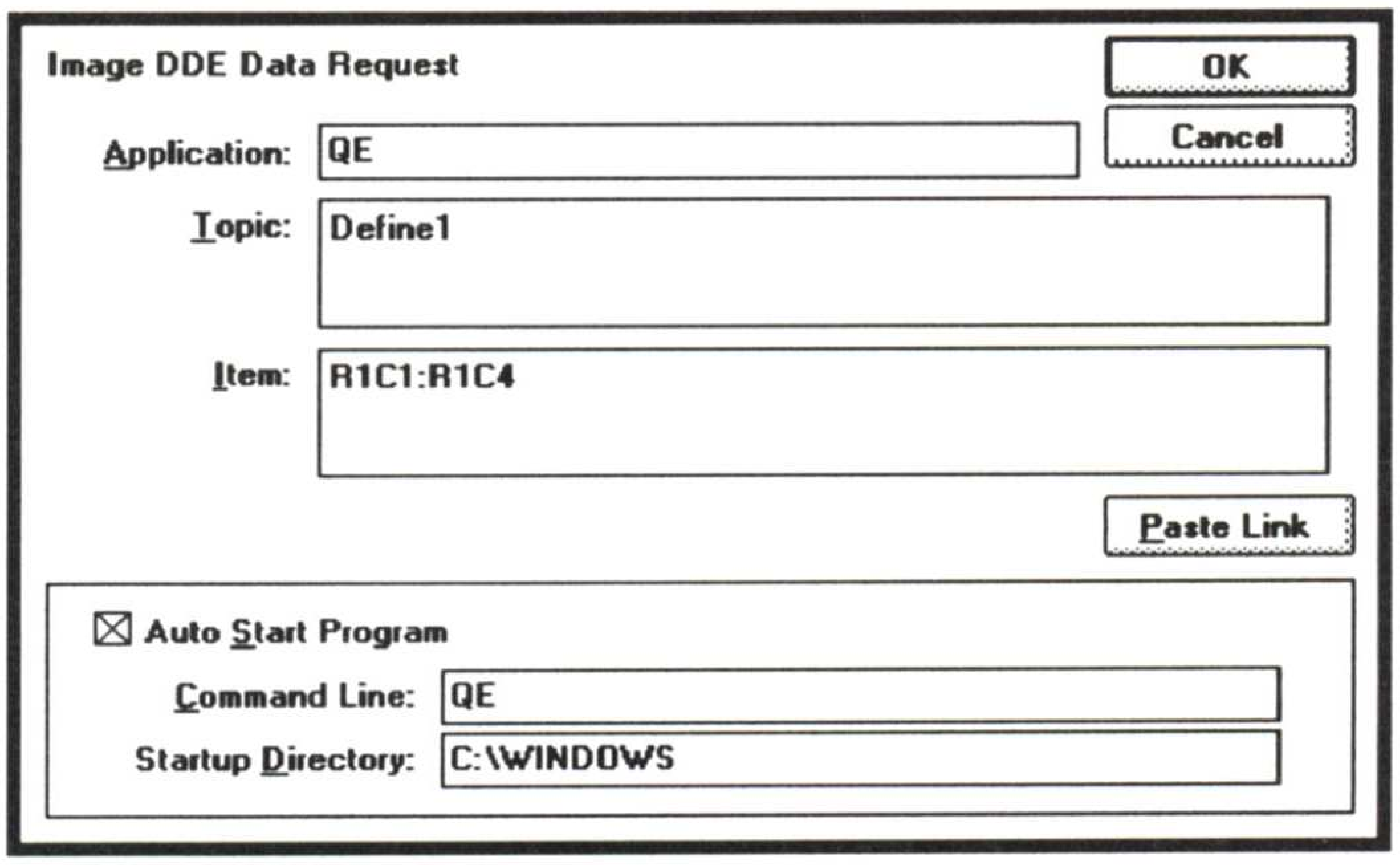


Image DDE Data Request

Application: QE

Topic: Define1

Item: R1C1:R1C4

☒ Auto Start Program

Command Line: QE

Startup Directory: C:\WINDOWS

Figure 7-3 Image DDE Data Request Dialog Box

For information about the options in this dialog box, see the Document Source command in *Chapter 3: Document Menu*.

Scaling

The Scaling command resizes an image using exact horizontal and vertical increments. Use the Image Scaling dialog box to specify the horizontal and vertical scaling amounts.

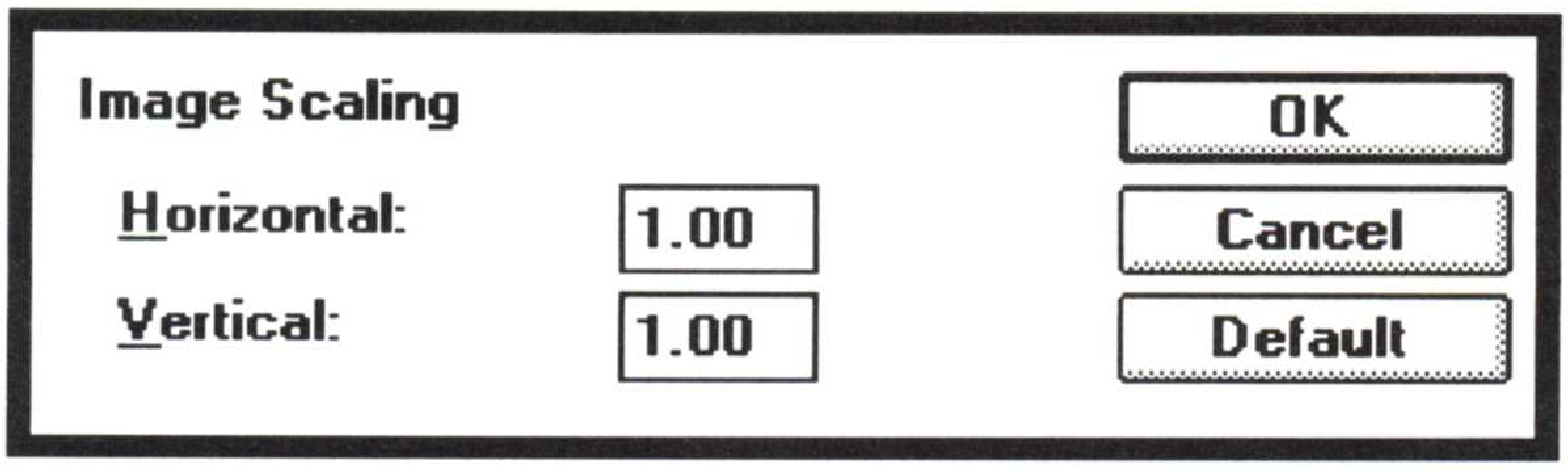


Figure 7-4 Image Scaling Dialog Box

The Scaling command works in these ways:

- With Fit Object to Image selected, Scaling resizes the object and image.
- With neither Fit commands turned on, Scaling resizes the image only, keeping the object size intact. You can use the mouse to resize the object only, keeping the image size intact. If the object size is smaller than the image, it crops the picture from the bottom and right. The image is always anchored at the top left corner.

Scaling is unavailable when Fit Image to Object is on.

Horizontal

The Horizontal box specifies the number by which to multiply the image's width. Type a number from 0.01 to 10.0 to increase or decrease the image horizontally. For example, 2 doubles the original width. The initial image size is 1.0.

Vertical

The Vertical box specifies the number by which to multiply the image's height. Type a number from 0.01 to 10.0 to increase or decrease the image vertically. For example, 0.33 decreases the height by a third. The initial image size is 1.0.

Default

The Default button resets the image to its original size of 1.0 by 1.0. Any increments other than 1.0 by 1.0 slow down LightShip's performance.

Fit Object to Image

The Fit Object to Image command snaps the object size to fit the image size. The Scaling command is available to resize the image and object proportionately. Resizing with the mouse is unavailable.

Fit Image to Object

The Fit Image to Object command snaps the image size to fit the current object size. You can use the mouse to resize the image and object together, but the Scaling command is unavailable.

Save Palette

The Save Palette command saves the image's original palette with its source file. It also makes the Image Source Palette command available so that you can change the image's colors for this screen.

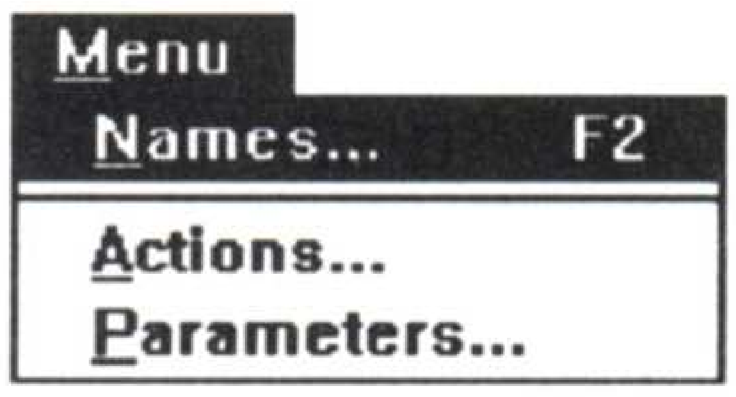
If you change the palette, you can return to the original one by turning off Save Palette. LightShip prompts you if it is "OK to delete save palette?" Choose OK to delete the palette and return to the original one.

***

Chapter 8

Menu Object Menu

The Menu Object Menu



You can create three types of menu objects:

- A menu-bar menu, which appears as a single command or a pull-down menu on the menu bar.
- An event-driven menu, which is not displayed and performs actions at all levels when one of these events occurs:

&&Open	a screen is opening
&&Close	a screen is closing
&&Recalc	parameters are being updated, a request for external data is being reissued, a Calculate Now action or command, or a screen is opening
&&Error	a LightShip system error occurs

- An execute menu, which is not displayed and carries out actions when executed by a hotspot or menu's *Execute Menu* action.

Use the Menu object menu to specify menu-bar names, menu-item names, actions, and parameters.

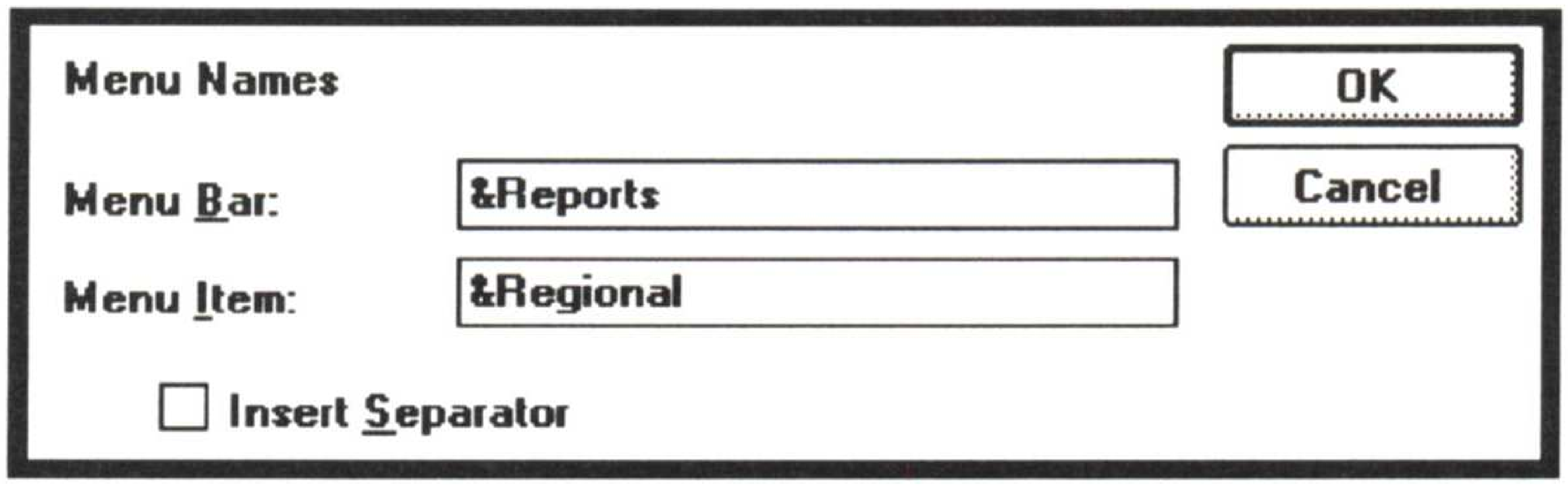
Menu objects are not displayed at the Author level. Use these View menu commands to show them:

- Show Hidden Objects displays menu-bar names and menu item names.
- Outline All Objects outlines a menu object with a dotted line.

At the Browse and Capture levels, menu-bar menus are displayed on the menu bar with the File, Edit, and Special menus. Use the Options Hide Menu Bar command to display only the menu-bar menus.

Names... (F2)

The Names command adds a menu-bar name and menu-item name to the menu object. Use the Menu Names dialog box to type the information that describes the menu.



Menu Bar: &Reports

Menu Item: &Regional

☐ Insert Separator

Figure 8-1 Menu Names Dialog Box

Menu Bar

The Menu Bar text box specifies the name of the menu.

For menu-bar menus, the menu-bar name is the name that you want to appear on the menu bar at the Browse level.

- An ampersand (&) in the name makes the following character an underlined shortcut key on the menu bar.
- An exclamation point (!) at the end of the name is the usual convention for identifying the name as a single menu-bar command. For example, Return!

Multiple menu-bar menus that have the same menu-bar names and different menu-item names display as one pull-down menu. The menu item that is furthest back displays first on the menu. Multiple menu-bar menus that do not have the same menu-bar names display independently on the menu bar. The menu furthest back appears first on the menu bar.

A menu-bar name that begins with two ampersands (&&) does not display on the menu bar and cannot be directly accessed at the Browse level.

For event-driven menus, use a reserved menu-bar name of either &&Open, &&Close, &&Error, or &&Recalc, depending on the event that you want to trigger actions.

For execute menus, it is the same menu-bar name that you entered in the source object's *Execute Menu* action. For information, refer to the *Execute Menu* action in *Chapter 10: Actions*.

☞ **Important**

If an execute menu is executed by an &&Open *Execute Menu* action, the execute menu must be in front of the event-driven object.

Menu Item

The Menu Item box specifies a descriptive name of the action(s) to execute. For menu-bar menus, the menu item appears as a command on the menu.

- An ampersand (&) in a menu-item name makes the following character an underlined shortcut key.
- Ellipses (...) after an item name is the usual convention for identifying a command that opens a dialog box. For example, Display Retrace Path...

For event-driven and execute menus, menu items are optional and display only in the Menu Names dialog box. An execute menu's menu item must be the same as the *Execute Menu* action's menu item.

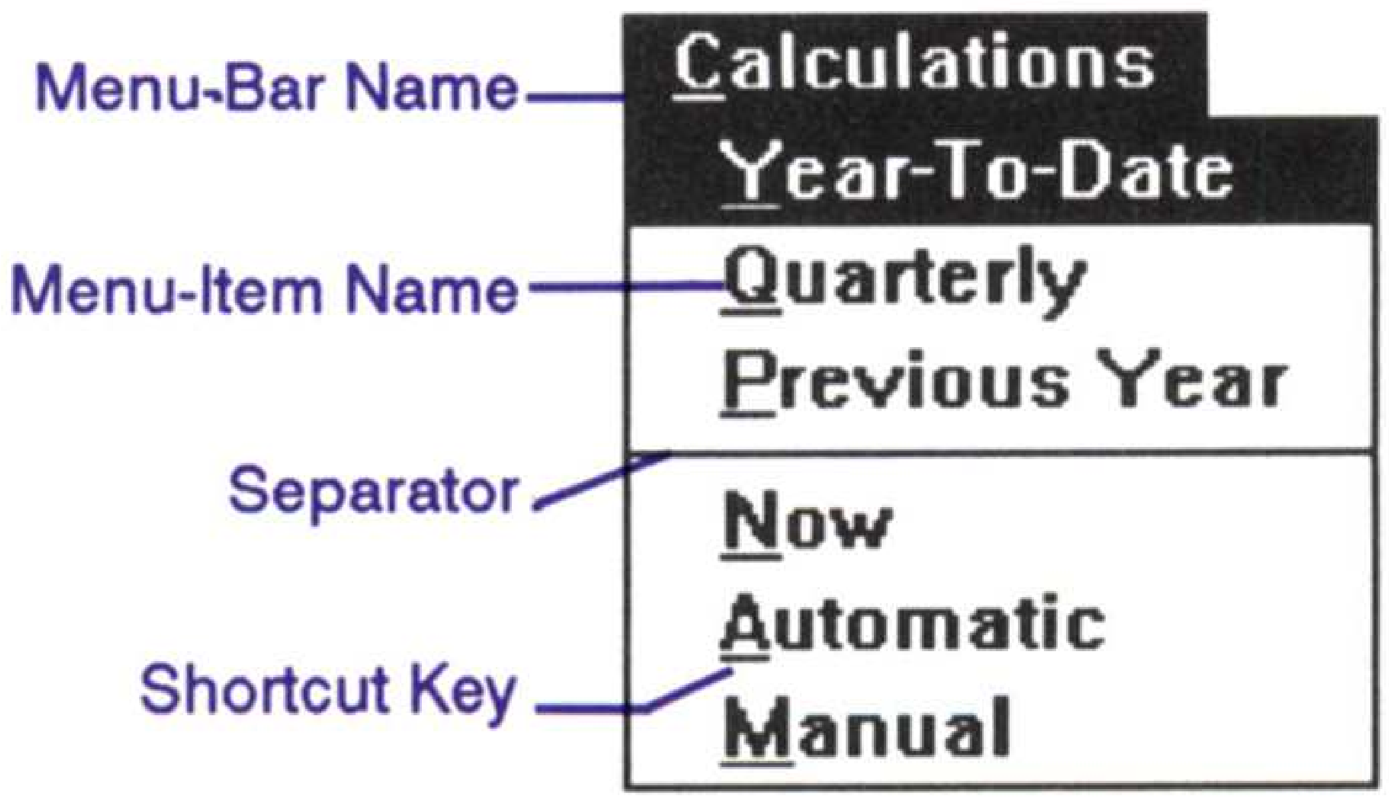


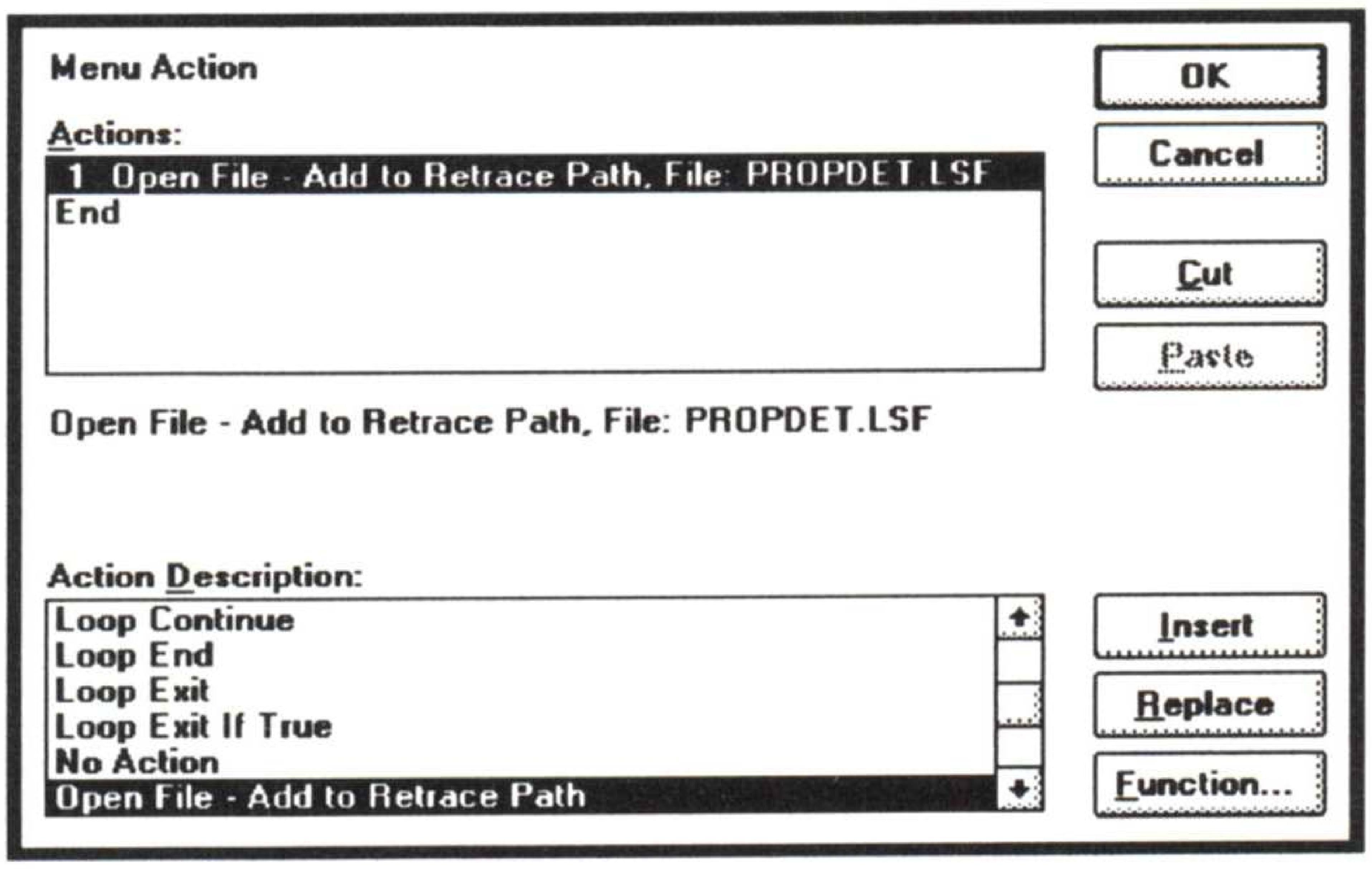
Figure 8-2 Menu-Bar Menu Characteristics

Insert Separator

Insert Separator adds a line between this menu item and the one above it.

Actions...

The Actions command specifies up to 250 actions to carry out when you choose this menu item. Use the Menu Action dialog box to add the actions.


Menu Action

Actions:

1 Open File - Add to Retrace Path, File: PROPDET.LSF
End

Open File - Add to Retrace Path, File: PROPDET.LSF

Action Description:

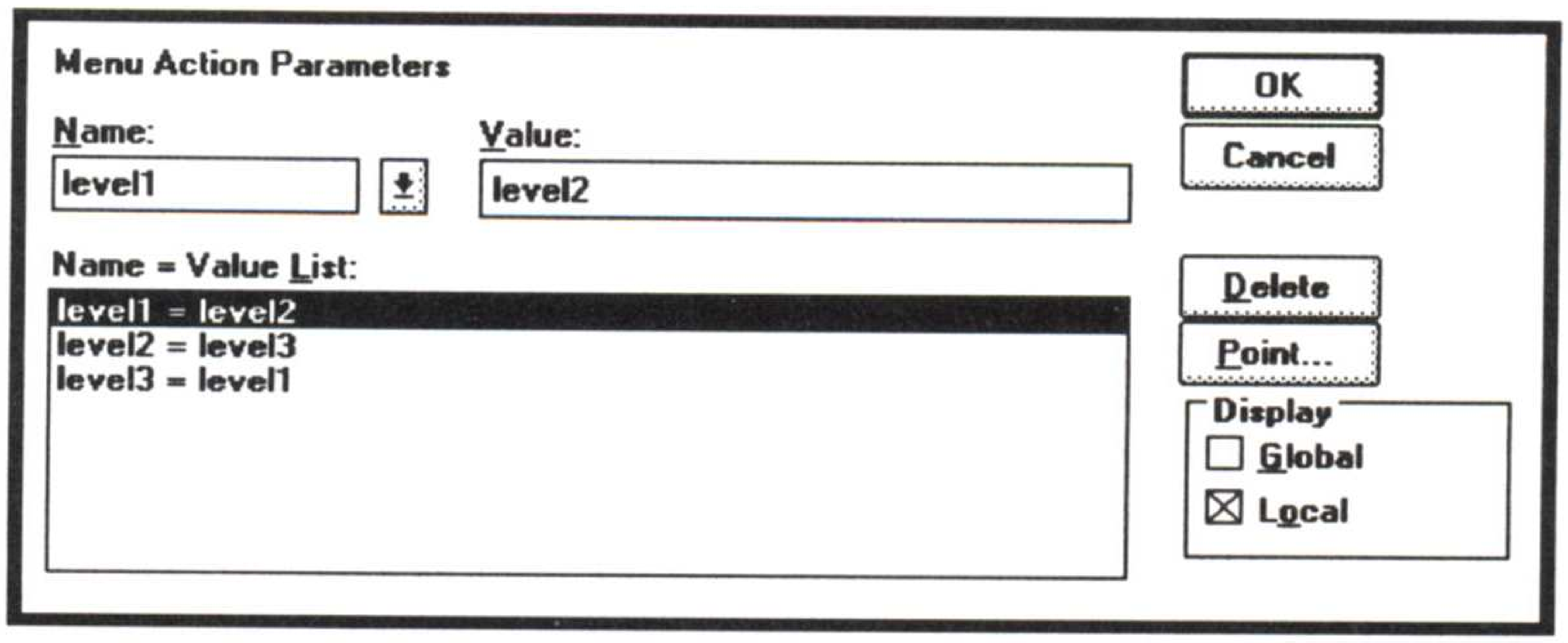
Loop Continue
Loop End
Loop Exit
Loop Exit If True
No Action
Open File - Add to Retrace Path

Figure 8-3 Menu Action Dialog Box

For information on the options in this dialog box, refer to *Chapter 10: Actions*.

Parameters...

The Parameters command assigns values to up to 20 parameters for the menu object. Use the Menu Action Parameters dialog box to specify parameter names and values.



Menu Action Parameters

Name: level1

Value: level2

Name = Value List:

level1 = level2
level2 = level3
level3 = level1

Display

☐ Global

☒ Local

Figure 8-4 Menu Action Parameters Dialog Box

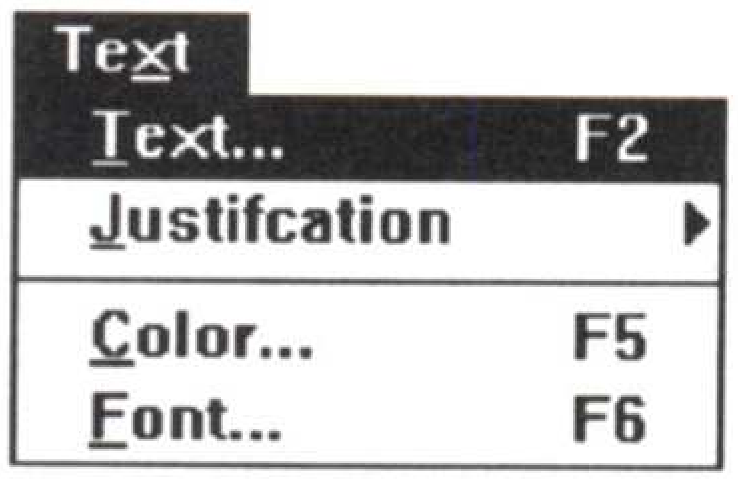
For information on the options and text boxes in this dialog box, refer to the Hotspot Parameters command in *Chapter 6: Hotspot Menu*.

* * *

Chapter 9

Text Menu

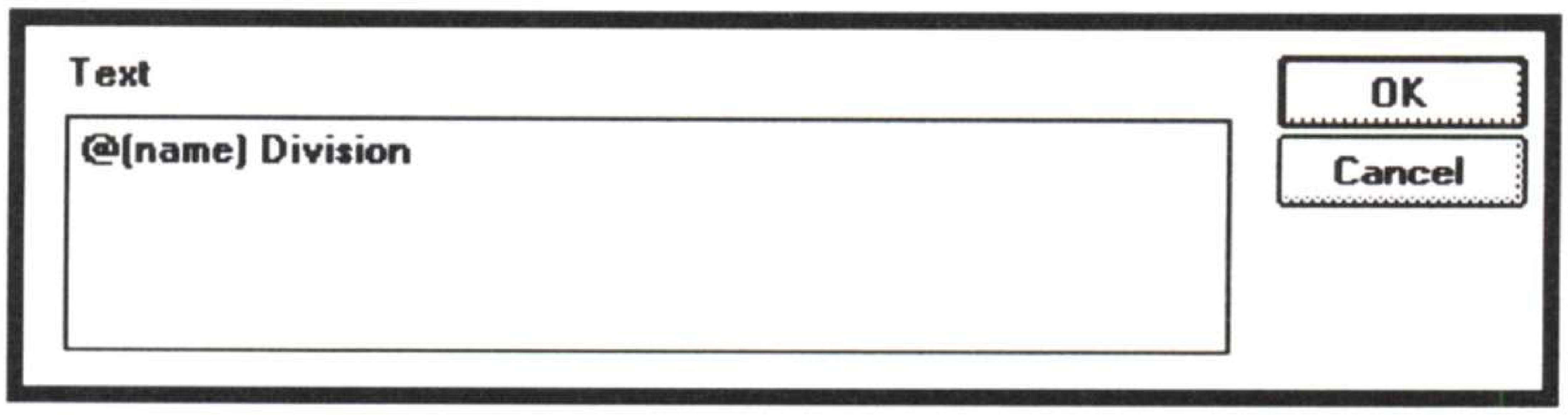
The Text Menu



Use the Text menu to add text for titles, button names, and annotations, and for displaying the variable values.

Text... (F2)

The Text command specifies the text to display in a text object. Use the Text dialog box to change the text.

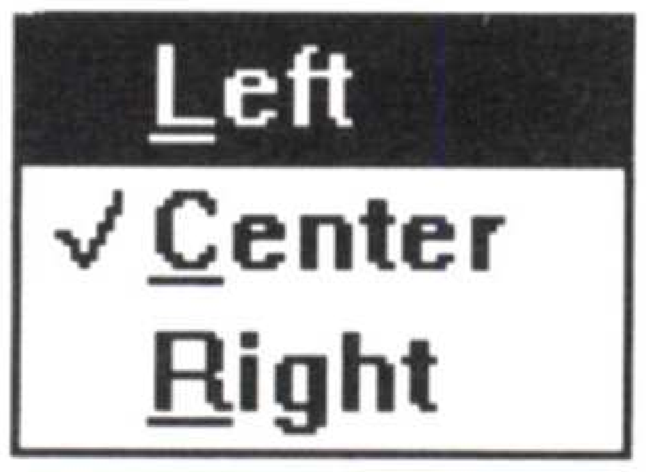


Text

@(name) Division

Figure 9-1 Text Dialog Box

Justification



The Justification command displays a cascading menu with commands for aligning the text to the left, right, or center in the text object.

Left

The Left command justifies the text to the left margin in the text object.

Center

The Center command justifies the text to the center in the text object.

Right

The Right command justifies the text to the right margin in the text object.

Color... (F5)

The Color command specifies the background color and text color for the text object. Use the Text Color dialog box to select colors.

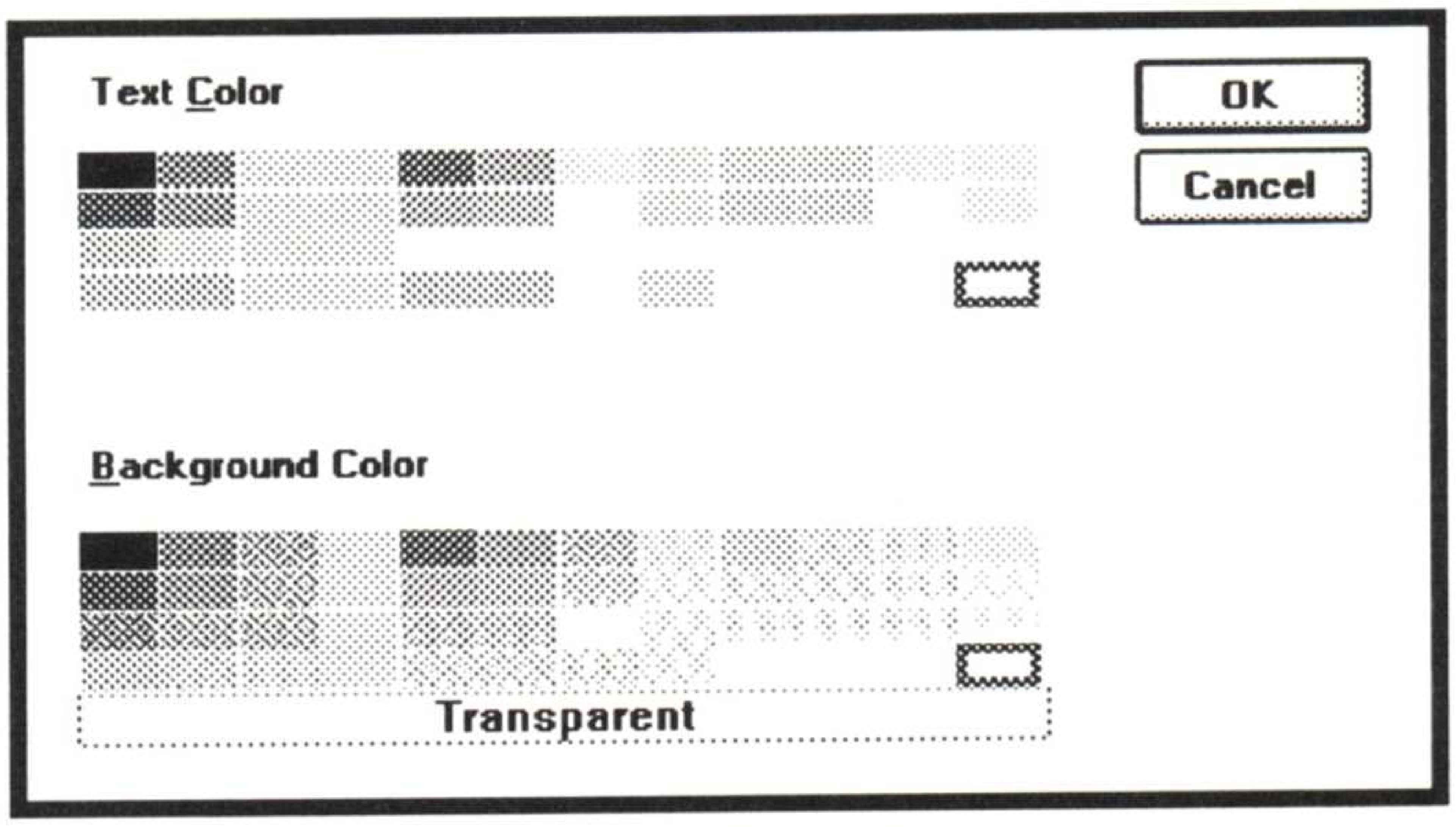


Figure 9-2 Text Color Dialog Box

Text Color

The Text Color boxes color the text in a text object. Select a solid color for the text. If you select a dithered color (one made up of differently colored dots), LightShip uses the closest solid color in the palette. The text color must be different from the background color so that each can display.

For more information on dithered and solid colors, refer to the Options Palette command in *Chapter 1: The Menu Bar*.

Background Color

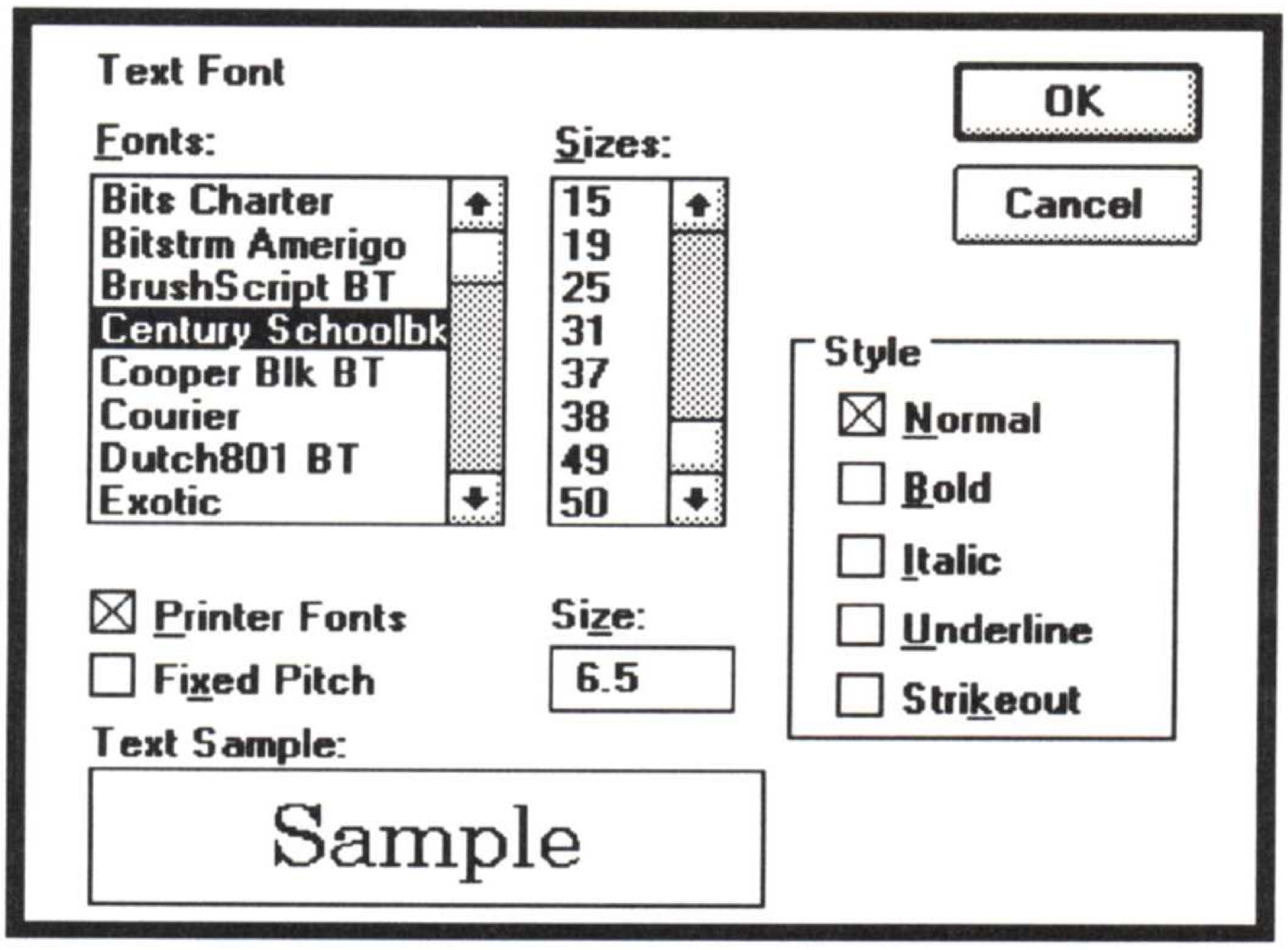
The Background color selection colors the background of a text object. You can select a dithered or solid background color. A solid background makes the text easier to read.

Transparent

The Transparent option makes the text object's background color transparent so that any object or screen color behind it shows through.

Font... (F6)

The Font command specifies the font type, size, and style for the text object. Use the Text Font dialog box to select a font.



Text Font

Fonts: Century Schoolbk

☒ Printer Fonts

☐ Fixed Pitch

Size: 6.5

Style

☒ Normal

☐ Bold

☐ Italic

☐ Underline

☐ Strikeout

Text Sample: Sample

Figure 9-3 Text Font Dialog Box

Fonts

The Fonts box lists the available fonts, which are various sets of characters in a particular typeface design.

When you install Windows, the Setup program installs certain fonts based on your choice of graphics adapter and printer(s). To change the font selection, refer to the *Microsoft Windows User's Guide*.

Size

The Size box lists the available font sizes, which are the height selections for fonts, measured in points. Use one of the selections or type your own size in the text box. If you type a size that is not available, LightShip uses the closest available size.

Printer Fonts

The Printer Fonts option lists the font types and sizes for the currently selected printer in the Fonts box. Turn off Printer Fonts (and Fixed Pitch) to list the proportional screen fonts and sizes.

Fixed Pitch

The Fixed Pitch option lists the monospaced screen fonts in the Fonts box. Use the Fixed Pitch feature if the proportional type is overlapping characters in the object.

Style

The Style options specify a text style of Normal, Bold, Italic, Underline, or Strikeout.

Text Sample

The Text Sample box displays a sample of text type, size, and style whenever you make a change.

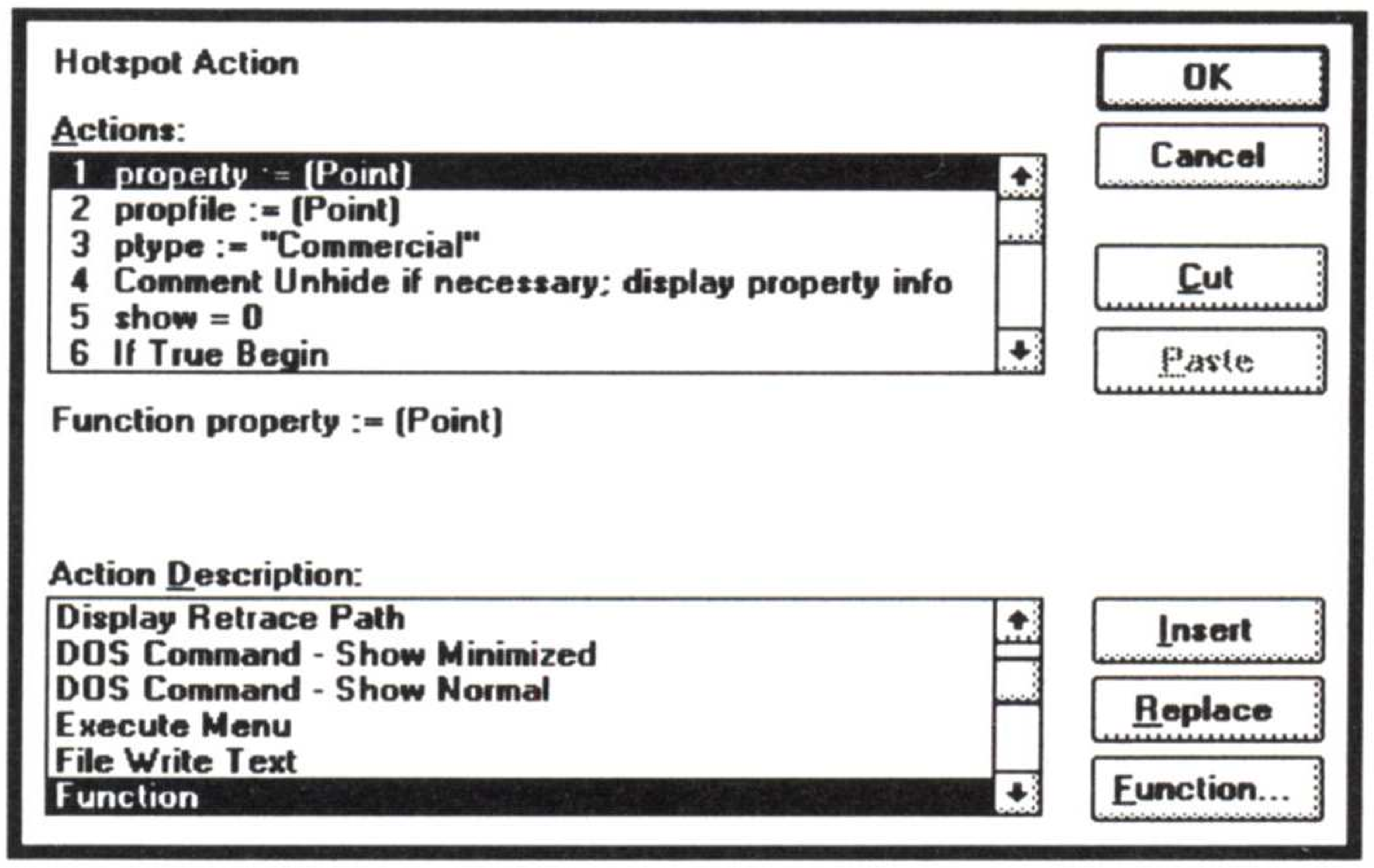
* * *

Chapter 10

Actions

The Action Dialog Box

The Action dialog box appears when you choose the Hotspot Actions or Menu Actions command. Use this dialog box to select one or more actions for this object.



Hotspot Action

Actions:

1 property := (Point)
2 propfile := (Point)
3 ptype := "Commercial"
4 Comment Unhide if necessary; display property info
5 show = 0
6 If True Begin

Function property := (Point)

Action Description:

Display Retrace Path
DOS Command - Show Minimized
DOS Command - Show Normal
Execute Menu
File Write Text
Function

Figure 10-1 Hotspot and Menu Action Dialog Box

Actions

The Actions box lists an object's actions. At the Browse and Capture levels, LightShip carries out these actions in sequential order (unless changed by a loop or condition action) until it reaches the End statement.

Selected actions are highlighted with a dotted line and are affected if you choose the Cut, Paste, Insert, or Replace buttons.

An action's specifications appear underneath the list box so you can see its full description without opening a dialog box.

Action Description

The Action Description box displays all the actions that you can select for a hotspot or menu object. Scroll through the Action Description box with the scroll bar. Or, type the first letter of the action name to jump to that action.

When you select an action in the Action Description box, it becomes highlighted with a dotted line; this means that it is actively selected and is affected if you choose the Insert or Replace button.

When you select actions for a new object, LightShip adds each action sequentially to the Actions box. You can add up to 250 actions for each object and use the same action any number of times.

Cut

The Cut button removes the selected action from the Actions box. All further actions move up a step.

Select multiple actions to cut by dragging the mouse down or up. Or press SHIFT and choose the first and last actions to be cut in a sequence.

The deleted action(s) are saved in a temporary buffer until you cut more actions. You can choose Paste to paste back the cut actions above the currently selected step of this object's dialog box or another object's dialog box.

The Cut button is unavailable if you have not added any actions to the Actions box.

Paste

The Paste button pastes the last action(s) that you cut above the selected action in the Actions box.

You can paste actions into the current Action dialog box or you can select another object and paste it into that object's Action dialog box. The Paste button is unavailable if you have not cut any actions.

Insert

The Insert button adds actions to the Actions list box above the selected step.

If you select an action from the Action Description box and choose Insert, LightShip adds the new action above the step that is selected in the Actions box. The action you are inserting may open a dialog box if LightShip requires more information to describe this action.

If you select one or more actions in the Actions box and choose Insert, LightShip copies the actions.

Replace

The Replace button changes actions already in the Actions list box. Depending on the situation, Replace might replace a new action onto an existing one, or change the dialog box options of an existing action.

If you select an action in the Action Description box and choose Replace, the new action replaces the one selected in the Actions box.

If you select an action in the Actions box and choose Replace, LightShip opens the action's dialog box so that you can change it. If the action does not lead to a dialog box, Replace does nothing.

The Replace button is unavailable if there is no action to replace.

Function...

The Function button adds the *Function* action to the Actions box. It is a shortcut for selecting *Function* from the Action Description box and then choosing Insert. Function opens the Function Action dialog box, described in *Chapter 11: Functions*.

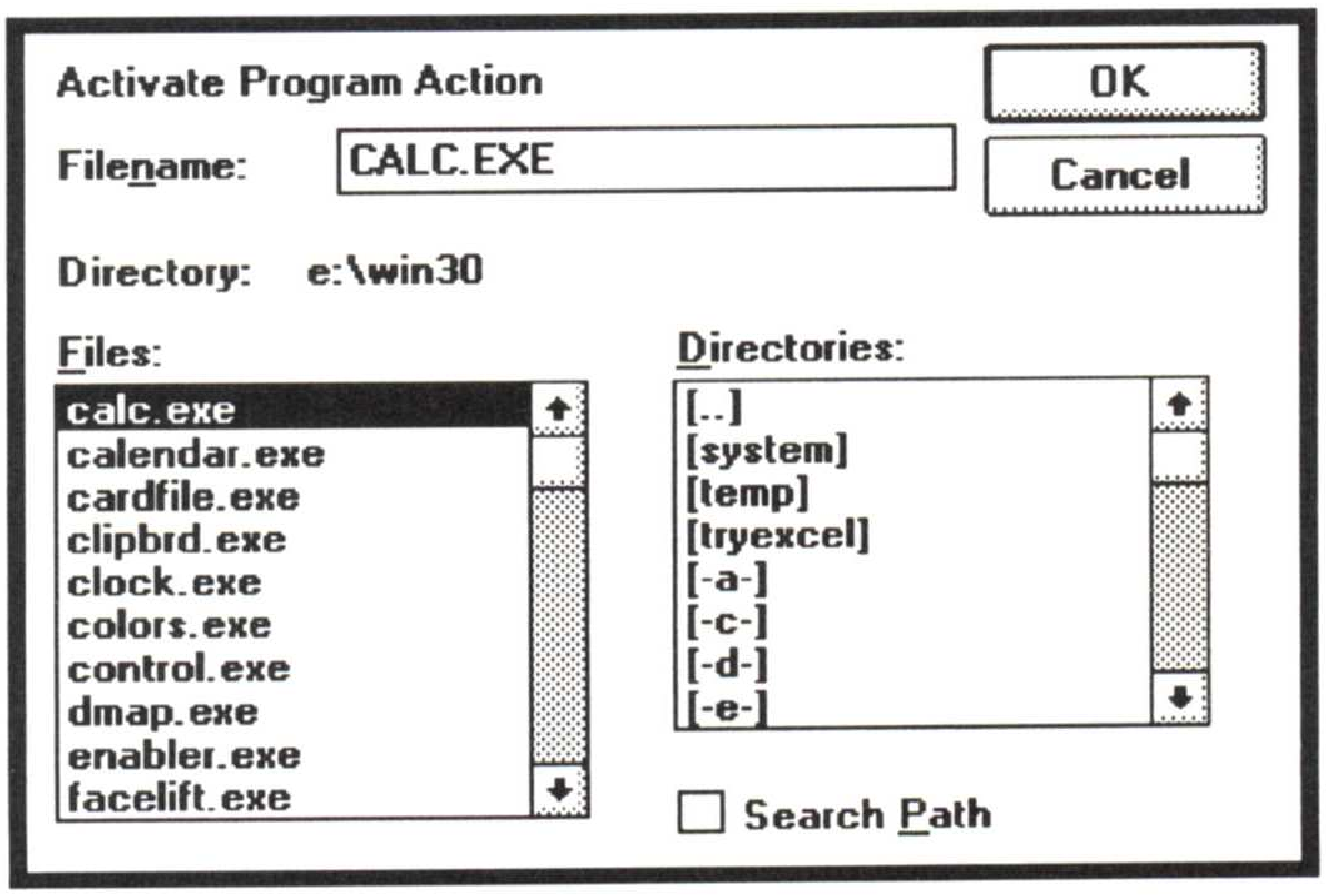
Actions

This section describes each hotspot and menu action in the Hotspot and Menu Action dialog boxes. First, it describes the action's affect at the Browse and Capture levels, and then at the Author level.

Activate Windows Program

This action activates the specified Windows .EXE program that is running behind LightShip. It remains the active window until you close it.

At the Author level, use the Activate Program Action dialog box to specify the filename of the program to activate. You can only select Windows-compatible .EXE files.



Activate Program Action

Filename: CALC.EXE

Directory: e:\win30

Figure 10-2 Activate Program Action Dialog Box

For more information about this dialog box, see File Open in *Chapter 1: The Menu Bar*.

Calculate Now

This action updates all parameter values that change and reissues a request for data from all objects' sources. Use Calculate Now to improve performance by updating the screen only after several changes have occurred.

The *Calculate Now* action performs exactly the same way as the Special Calculate Now command. Use the *Calculate Now* action to update data when the menu bar is hidden at the Browse level. For more information about Options Hide Menu Bar, refer to *Chapter 1: The Menu Bar*.

Calculation Automatic

This action controls the updating of parameter values and the reissuing of requests for external data. Use Automatic when you want to continually update the screen when changes occur.

For more information about automatic calculation, refer to the Special Calculation Automatic command in *Chapter 1: The Menu Bar*.

Calculation Manual

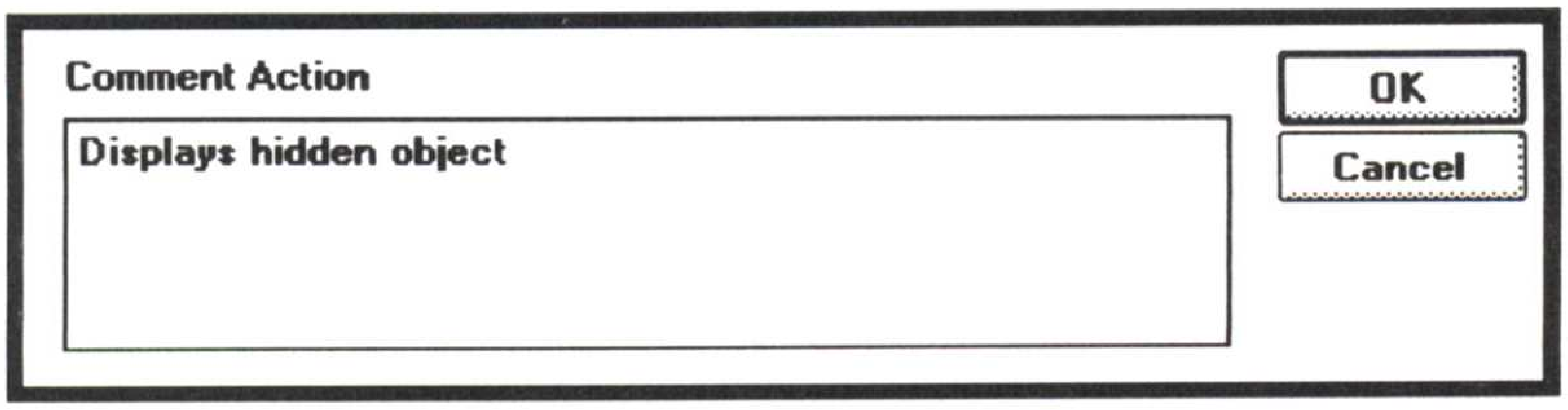
This action turns on manual calculation. Use Manual when you want to selectively update the screen with changes at certain times, but not continually.

For more information about manual calculations, refer to Special Calculation Manual in *Chapter 1: The Menu Bar*.

Comment

This action adds a note that is visible only in the Hotspot or Menu Action dialog box or the Debug window. Use *Comment* to annotate actions.

Use the Comment Action dialog box to enter a comment up to 511 characters long.


Comment Action

Displays hidden object

Figure 10-3 Comment Dialog Box

Copy to Clipboard

This action copies the entire screen as a bitmap image to the Clipboard. The contents remain on the Clipboard until you cut or copy something else or exit from Windows. For example, you can paste a LightShip chart as a Clipboard image to another LightShip screen or to another Windows application, or send it through an electronic mail system using a DDE Paste Link.

This action copies the following formats:

- CF_BITMAP
- CF_DIB
- CF_PALETTE

(Use Edit Copy to copy selected objects, but not the whole screen.)

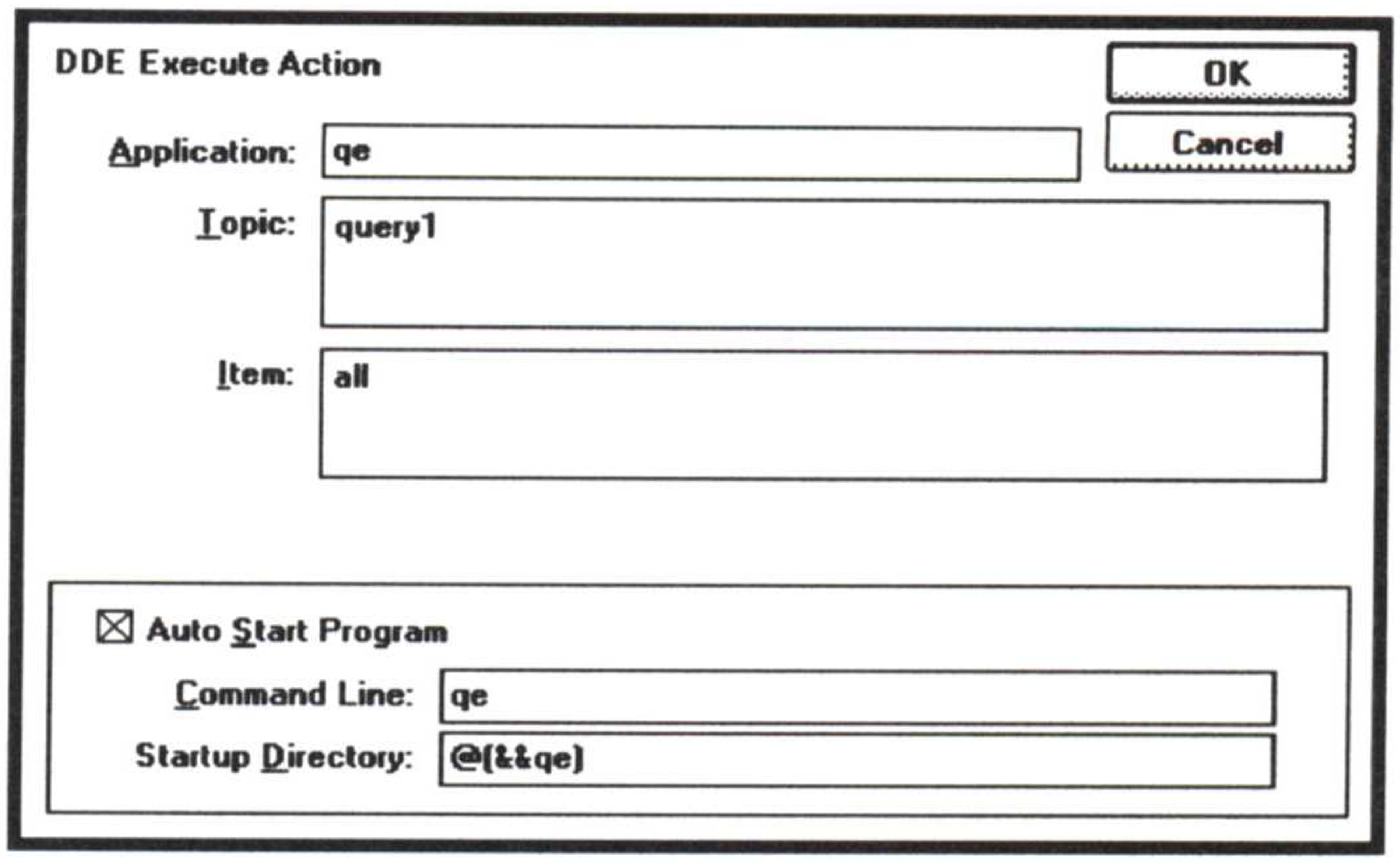
DDE Execute

This action sends a DDE Execute command string to a server application.

If a screen is using a DDE Request to access external data, use a *DDE Execute* action within an &&Close event-driven menu to send DDE Close and Quit commands when the screen closes. For information about event-driven menus, refer to *Chapter 8: Menu Object Menu*.

At the Author level, use the DDE Execute Action dialog box to enter the Application Name, Topic, and Item for the server application. For the syntax of data entry in these text boxes, refer to the server application documentation.

For a complete description of DDE with examples, see Chapter 12 in the *LightShip User's Guide*.



DDE Execute Action

Application: qe

Topic: query1

Item: all

☒ Auto Start Program

Command Line: qe

Startup Directory: @(&&qe)

Figure 10-4 DDE Execute Action Dialog Box

Application

The Application box specifies the application name, up to 32 characters. For example, type EXCEL, QE™, or POWERPOINT®.

Topic

The Topic box specifies the data grouping, up to 255 characters. For example, type ANNUAL.XLS or EMP.DBF.

Item

The Item box specifies the data within the topic to be passed in a DDE Execute. You can enter any number of characters. The entire item must be enclosed in brackets ([ ]).

When Excel uses two slashes or two double-quotes (\\ or "") in its syntax, you must type only one (\ or ").

Auto Start Program

The Auto Start Program option starts the server when the DDE Execute is issued, if it is not already running.

Command Line

The Command Line box specifies the command that starts the server application. Use the Command Line text box to specify the full pathname of the server at these times:

- When the path is not defined by the DOS Path command
- When the path is not specified in the Startup Directory text box

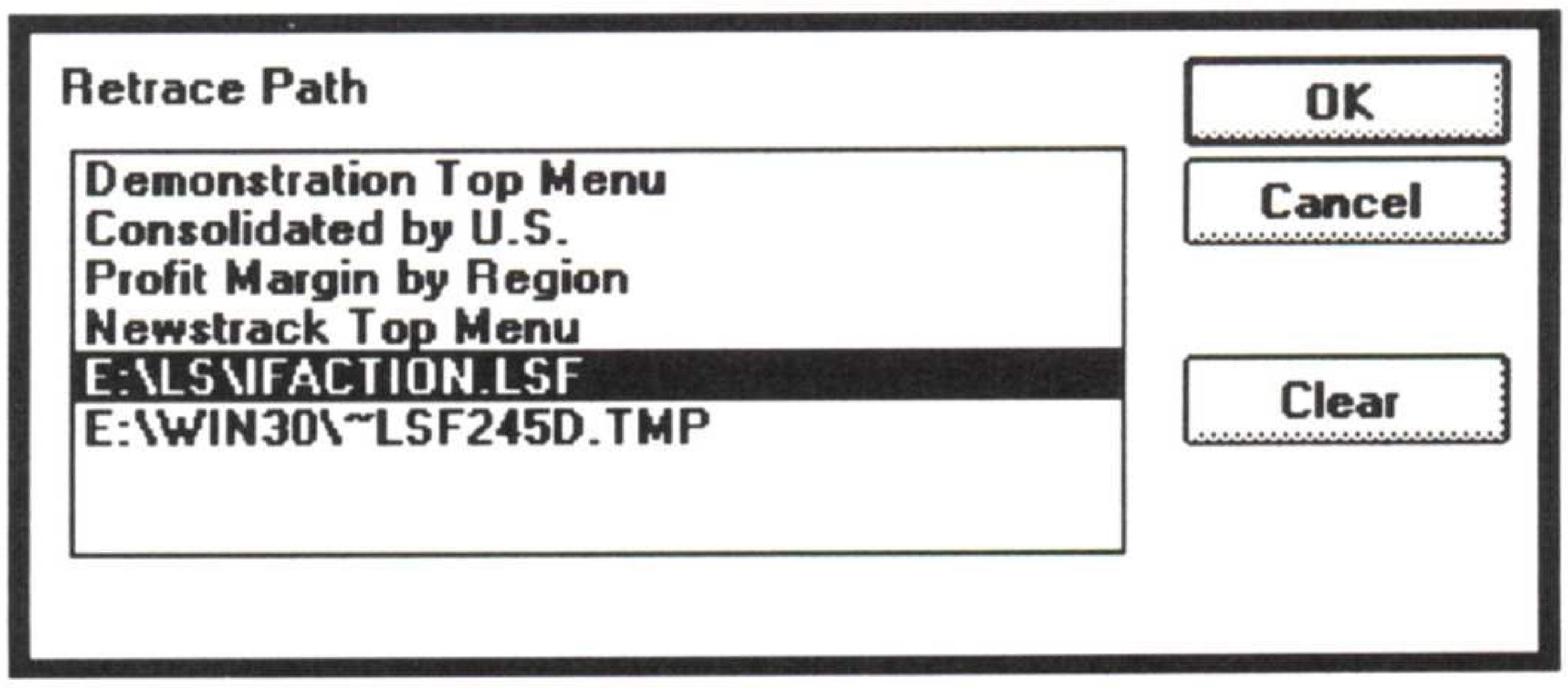
Startup Directory

The Startup Directory box starts the server in a different drive and directory than the current one. Type the drive and pathname in which you want to start the server application. You can use files from that directory without specifying a path. The current working directory remains the same.

Display Retrace Path

This action displays a list of the files (or window caption titles) opened during this session. Use the Retrace Path dialog box to view, clear, or open a file in the path. Any file you open in this dialog box is not added to the retrace path.

The *Display Retrace Path* action performs the same way as the Special Retrace Path command. Use this action to access the retrace path list when the menu bar is hidden. For information about Special Retrace Path, Options Hide Menu Bar, and the Retrace Path dialog box options, refer to *Chapter 1: The Menu Bar*.



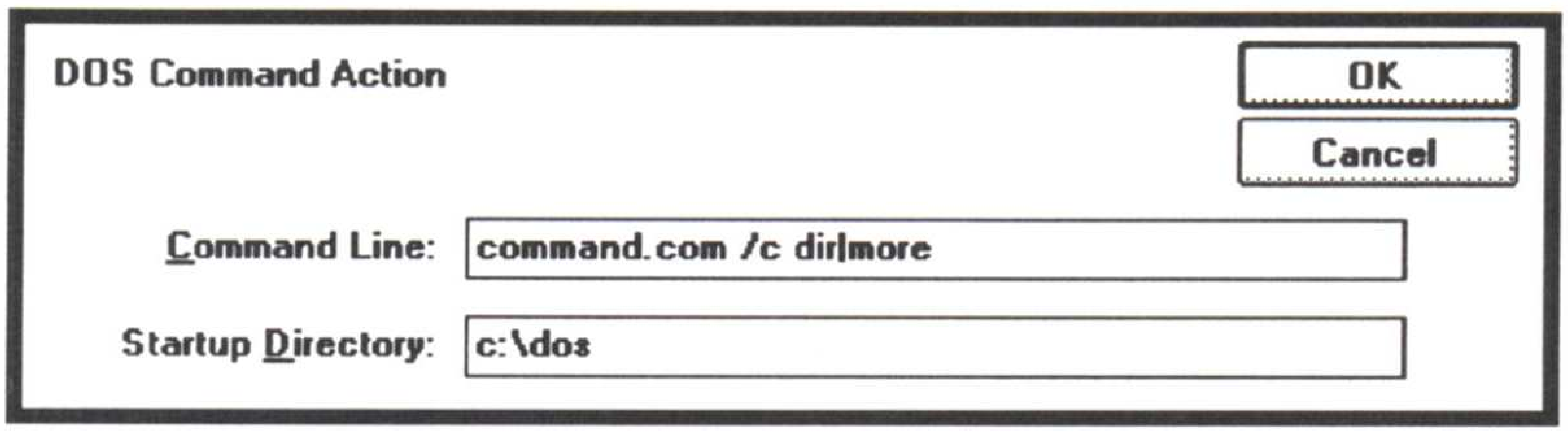
Demonstration Top Menu
Consolidated by U.S.
Profit Margin by Region
Newstrack Top Menu
E:\LS\IFACTION.LSF
E:\WIN30\~LSF245D.TMP

Figure 10-5 Retrace Path Dialog Box

DOS Command - Show Minimized

This action starts a DOS command or program. If you enter a Windows .EXE program, LightShip minimizes it to an icon and continues to be the active program.

At the Author level, use the DOS Command Action dialog box to enter the DOS executable command of the program you want to run.



Command Line: command.com /c dir|more

Startup Directory: c:\dos

Figure 10-6 DOS Command Dialog Box

Command Line

The Command Line box specifies the DOS command to carry out. Type any command that you might type in the Windows File Run dialog box.

You must fully specify the pathname and filename of a DOS program at these times:

- When the path is not defined by the DOS Path command
- When the path is not entered in the Startup Directory text box

Startup Directory

The Startup Directory box starts the DOS command in a different drive and directory than the current one. You can use the files in that directory without specifying a path. The current working directory remains the same.

DOS Command - Show Normal

This action starts a DOS command or program that becomes the active window in front of LightShip. After using it, close it in the usual manner to return to the LightShip screen.

At the Author level, use the DOS Command Action dialog box to enter the DOS executable command of the program you want to run. For example, `c:\command.com /c \dir`. For information about the dialog box options, see the *DOS Command - Show Minimized* action.

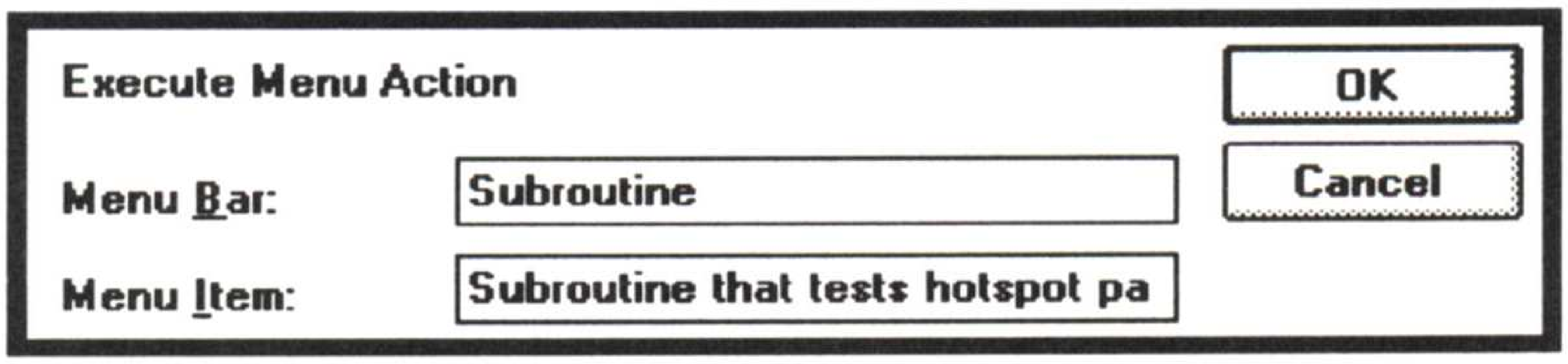
Execute Menu

This action carries out the actions of an execute menu object. You can execute any type of menu object with this action.

Use the Execute Menu Action dialog box to type the menu-bar name and optional menu-item name of the execute menu. Then create the execute menu object using the same menu-bar name and menu-item name; this way, LightShip knows where to go during the *Execute Menu* action.

At the Browse level, LightShip interprets this action by looking for a menu with the same menu-bar name. Then it carries out the actions of the menu object. Once the execute menu actions are finished, LightShip continues with the actions for the currently selected hotspot or menu.

If you attempt to carry out an execute menu that does not exist, LightShip displays a warning message, skips the *Execute Menu* action, and continues to the next action in the list.



Menu Bar: Subroutine
Menu Item: Subroutine that tests hotspot pa

Figure 10-7 Execute Menu Action Dialog Box

Menu Bar

The Menu Bar box specifies the name of the execute menu, which cannot contain a variable reference. Type two ampersands (&&) before the menu-bar name so that the menu does not display on the Browse level menu bar; it gets carried out only by the object's *Execute Menu* action. You must use this same menu-bar name when you create the execute menu.

Menu Item

The Menu Item box describes the execute menu's purpose. Execute menu items are optional; if you add one, you must use the same menu-item name when you create the execute menu.

File Write Text

This action appends text to the end of a text file or overwrites the entire text file.

At the Author level, use the File Write Text dialog box to specify the text and the filename.

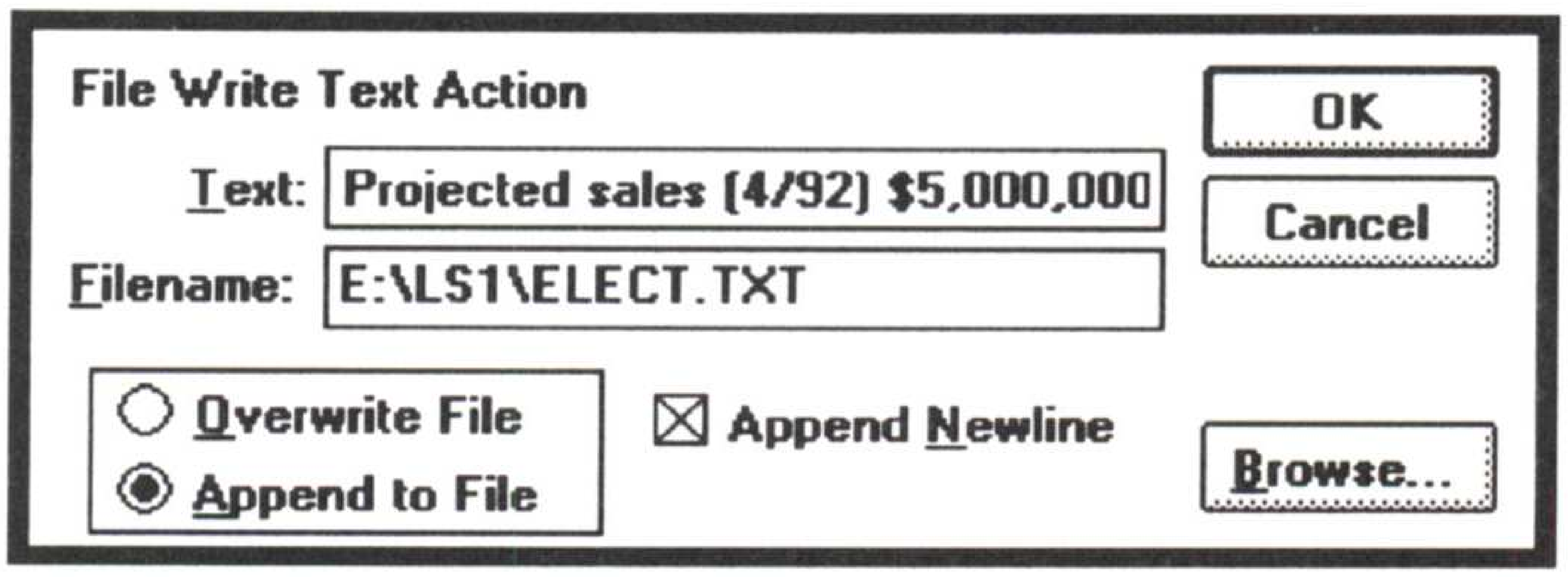

File Write Text Action
Text: Projected sales (4/92) $5,000,000
Filename: E:\LS1\ELECT.TXT
○ Overwrite File
● Append to File
☒ Append Newline

Figure 10-8 File Write Text Dialog Box

The file to which you are writing should not be open when you perform a *File Write Text* action. Therefore, it should not be used as a document object source in the current screen.

Text

The Text box specifies the text, up to 511 characters, to add to the text file.

Filename

The Filename box specifies the file to which you will append new text or which you will overwrite with new text.

Overwrite File

The Overwrite File option erases the existing information in the text file and writes only the information you type in the Text box.

Append to File

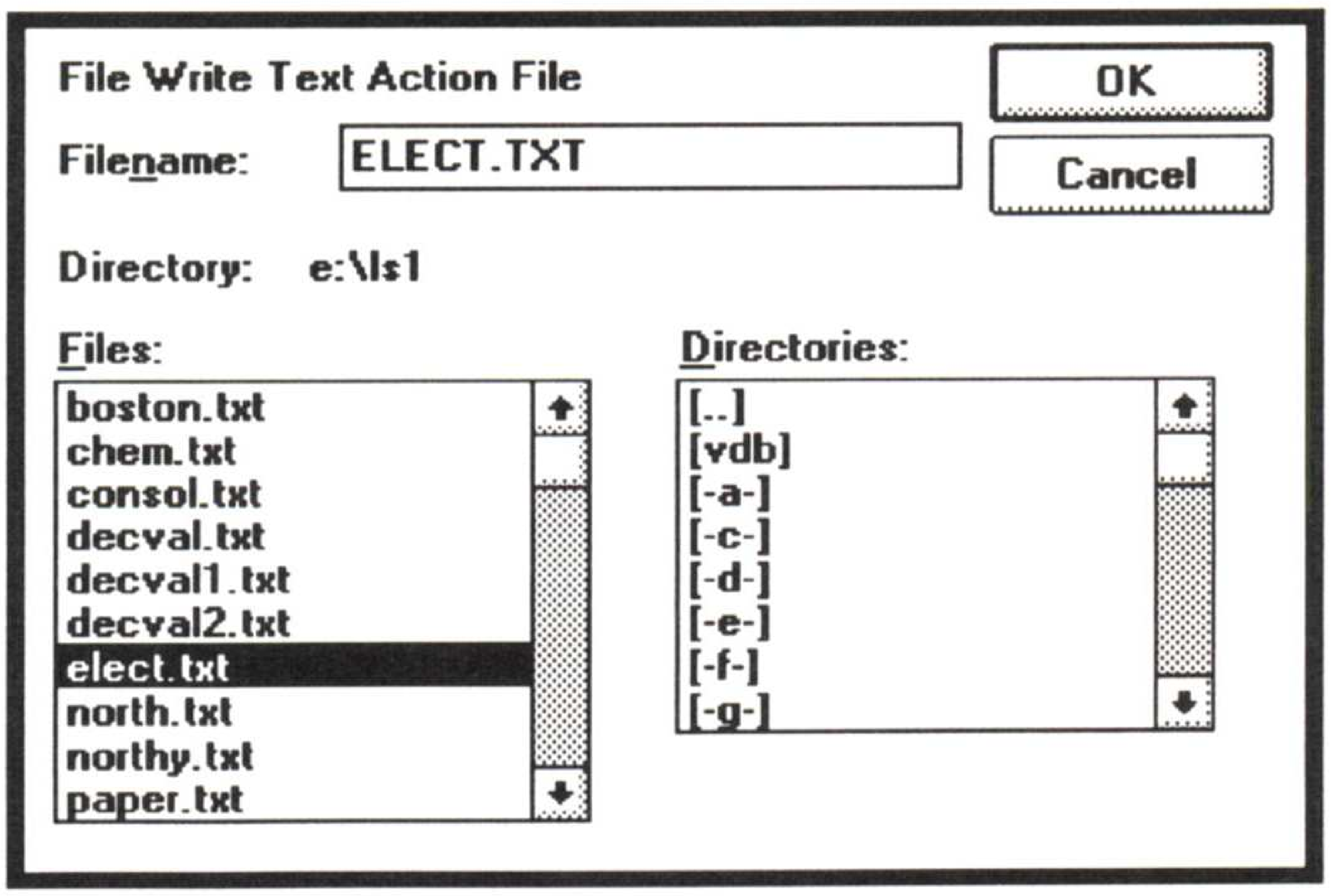
The Append to File option adds the text from the Text box to the last line of the text file.

Append Newline

The Append Newline option adds the text from the Text box after the last line of the text file.

Browse...

The Browse button opens the File Write Text Action File dialog box. Use this dialog box to select a file to open instead of typing into the Filename text box.


File Write Text Action File

Filename: ELECT.TXT

Directory: e:\ls1

Files:
- boston.txt
- chem.txt
- consol.txt
- decval.txt
- decval1.txt
- decval2.txt
- elect.txt
- north.txt
- northy.txt
- paper.txt

Directories:
- [..]
- [vdb]
- [-a-]
- [-c-]
- [-d-]
- [-e-]
- [-f-]
- [-g-]

Figure 10-9 File Write Text Action File Dialog Box

For information about the dialog box options, refer to the File Open command in *Chapter 1: The Menu Bar*.

Function

This action performs an operation on numbers or strings and returns a result variable. For information about the *Function* action and dialog box, refer to *Chapter 11: Functions*.

☞ **Important**

The term *condition flag* is used in the following *If* and *Loop* actions. A condition flag is any *Function* action's result that LightShip interprets as a scalar true or false. For more information, refer to *Chapter 11: Functions.*

If False Begin

This action carries out the actions of its block if the condition flag that precedes it is false. LightShip continues carrying out the block's actions until it detects an *If End* action.

If the condition flag is true, LightShip looks for an *If Else* action or an *If End* action.

Example

In the example shown here, *If False Begin* assigns one set of parameters if the condition flag is false and *If Else* assigns an alternate set of values if the condition flag is true.

```
year = 90
If False Begin
        year := 90
        otheryear := 91
If Else
        year := 91
        otheryear := 90
If End
```

If True Begin

This action carries out the actions of its block if the condition flag that precedes it is true. LightShip continues carrying out the block's actions until an *If End* action.

If the condition flag is false, LightShip looks for an *If Else* action or an *If End* action.

If Else

This action begins an alternate block of actions when:

- The condition flag before an *If True Begin* is false.
- The condition flag before an *If False Begin* action is true.

The actions in the *If Else* block continue until LightShip encounters an *If End* action.

If End

This action identifies the end of an *If True Begin*, *If False Begin*, and *If Else* action. *If End* closes the block so that actions outside of it can continue.

Loop Begin

This action begins a loop and carries out the loop's actions repeatedly.

You exit from a loop with a *Loop Exit* or *Loop Exit If True* action. You close a loop with a *Loop End* action.

Example

This loop fetches the current position and size of an object and gives it a new position and size. The loop repeats eight times to fetch and reposition eight objects. The *If True Begin* block of actions assigns a value when *n = 8* becomes true.

```
show = 0
If True Begin
      n := 1
      Loop Begin
            pos := FETCH (range, n, 1)
            POSITION(@(n),1,0,0, pos)
            n := n + 1
            n = 8
            If True Begin
              show := 1
              Loop Exit
          If End
          Loop End
If End
```

Loop Continue

This action sends control back to the *Loop Begin* action and causes actions to be executed from the top of the loop. This way, you can skip many actions or branch to a different part of a loop.

You must put a condition action (e.g., *If True Begin*, *If False Begin*) before a *Loop Continue* and end the block with an *If End*. When the inverse of *Loop Continue* is true, LightShip executes the actions that follow the *If End* action until LightShip encounters a *Loop End*.

Example

```
x := 1
Loop Begin
    x@(x) = x
    x := x + 1
    x <= 3
    If True Begin
        Loop Continue
    If End
    x := 1
Loop End
```

Loop Exit

This action exits from a loop. You typically begin a loop, enter a condition flag, an *If True Begin* or *If False Begin* action, other actions, and then a *Loop Exit*.

Example

```
x := 1
Loop Begin
    x@(x) = x
    x := x + 1
    x > 3
    If True Begin
        x := 1
        Loop Exit
    If End
Loop End
```

Loop Exit If True

This action immediately exits you from a loop when a condition flag that precedes it is true.

Example

In the example shown here, the loop fetches the hidden position and size of an object and gives it in a new position and size. The loop repeats a total of eight times to fetch and reposition eight objects. When *n = 8* becomes true, you exit from the loop due to a *Loop Exit If True*.

```
show = 1
n := 1
Loop Begin
      pos := FETCH(range, n, 1)
      POSITION(pos, @(n),1,0,0)
      n := n + 1
      n = 8
      Loop Exit If True
Loop End
show := 0
```

Loop End

This action identifies the end of a loop that was started with a *Loop Begin* action. The next action to be executed is the one that follows the matching *Loop Begin*.

No Action

This action performs no action other than setting the parameters you assign using the Hotspot or Menu Parameters command.

Parameters are always assigned before any actions are carried out at the Browse level. Parameters can be passed from screen to screen. For information about assigning hotspot or menu parameters, refer to the Hotspot Parameters command in *Chapter 6: Hotspot Menu*.

☞ **Important**

Open File actions and the *Return in Retrace Path* action allow you to pass up to 50 hotspot and menu parameters to the screen you are opening. These passed parameters take precedence over any variables in the opened screen that have the same name.

As an exception, if the opened screen has an object whose action sets parameters with the same name as the ones you are passing, the object's parameters take precedence over the passed parameters that have the same name.

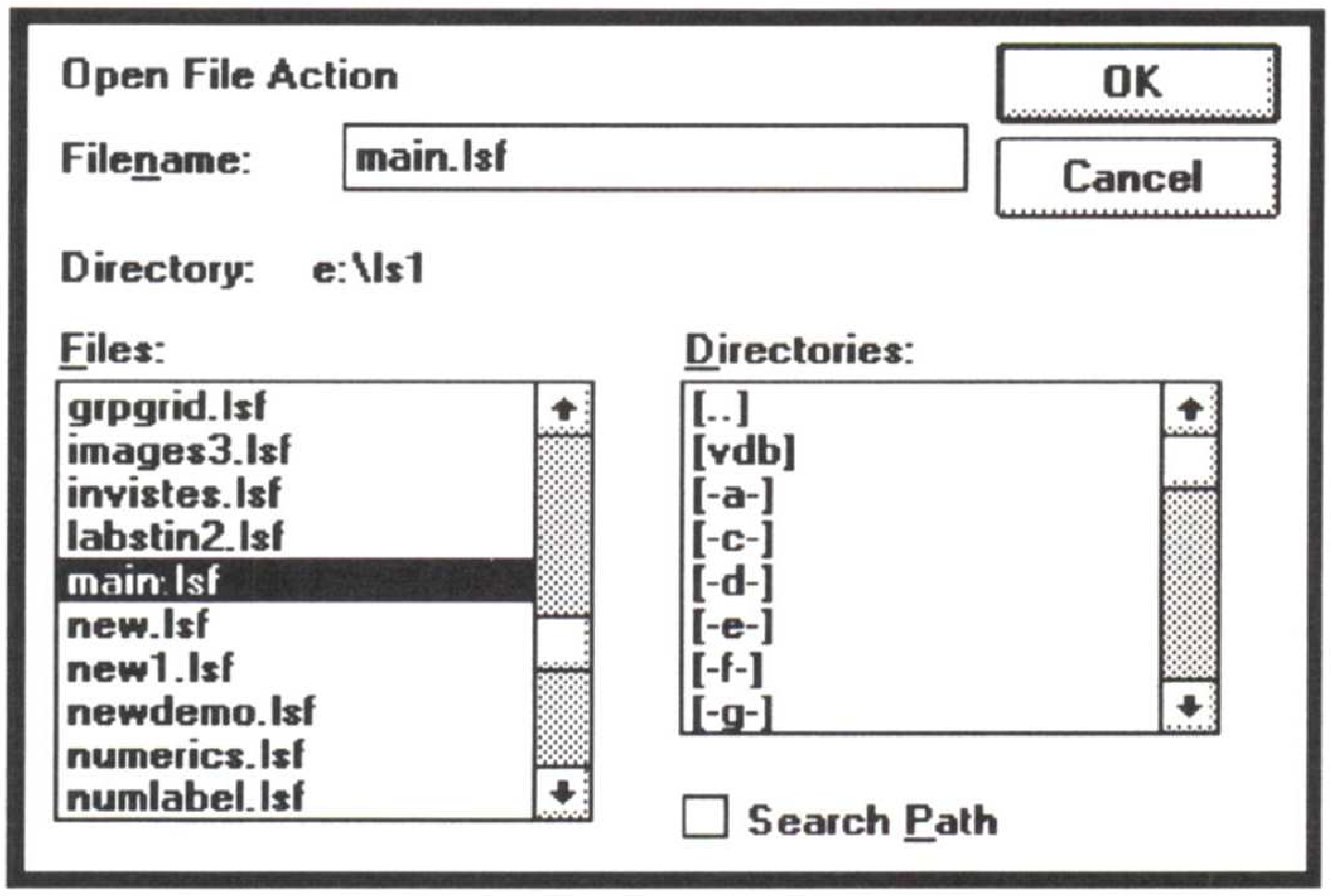
If you add a command after an Open File or *Return in Retrace Path* action, LightShip ignores it because the file that is opening takes precedence.

For information about the Open File dialog box that every Open File action opens, see File Open in *Chapter 1: The Menu Bar*. For information about using a retrace path, see the *LightShip User's Guide*.

Open File - Add to Retrace Path

This action opens the selected LightShip file and adds it to the end of the retrace path list. Use this action to be able to return to previously opened screens.

Use the Open File Action dialog box to select the file to open.



Filename: main.lsf

Directory: e:\ls1

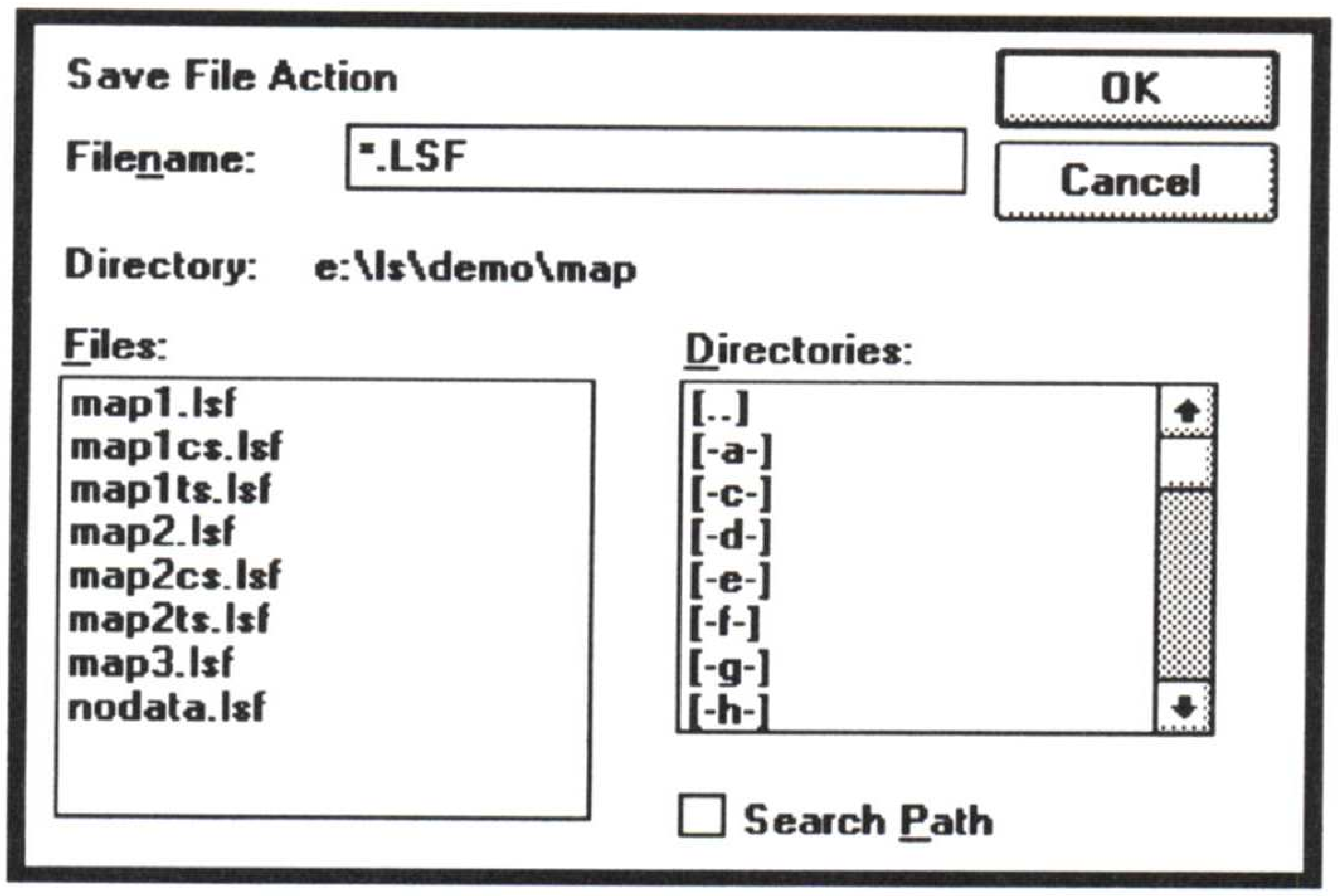
Figure 10-10 Open File Action Dialog Box

Open File - Clear the Retrace Path	This action opens the top file and erases all filenames in the retrace path list except the top one. Use this action if you opened several files, added them to the retrace path, and you want to return directly to the top screen from the last called screen. Use the Open File Action dialog box to select the file name to be opened.
Open File - Dialog (Add to Retrace Path)	This action opens the standard File Open dialog box at the Browse and Capture level so that a user can select a file to open and add it to the retrace path list. In the same manner as *Open File - Add to Retrace Path*, the file is added to the end of the retrace path list. This is useful for returning sequentially back through the calling screens.
Open File - Replace in Retrace Path	This action opens a file and adds it to the retrace path list in place of the calling file. Use the Open File Action dialog box to select the file to open.
Print Screen	This action prints the current screen display to the default printer.
Printer Setup	This action changes the printer and printer settings. Use the Printer dialog box to select a different printer. Use the Setup button to change the printer settings.
Return in Retrace Path	This action opens the screen above itself in the retrace path list. This action is often used to return to the screen whose Open File action opened this screen.

Save File

This action saves the screen with the selected filename. This action replaces the previous version of the same filename. Its new name is displayed in the retrace path list.

Use the Save File Action dialog box to select the same filename or a different filename in which to save the screen. For more information about the options in this dialog box, refer to the File Open command in *Chapter 1: The Menu Bar*.


Save File Action

Filename: *.LSF

Directory: e:\ls\demo\map

Files:
map1.lsf
map1cs.lsf
map1ts.lsf
map2.lsf
map2cs.lsf
map2ts.lsf
map3.lsf
nodata.lsf

Directories:
[..]
[-a-]
[-c-]
[-d-]
[-e-]
[-f-]
[-g-]
[-h-]

☐ Search Path

Figure 10-11 Save File Action Dialog Box

☞ **Important**

You cannot use the *Save File* or *Save File - Temporary Name* actions in an &&Open or &&Close event-driven menu.

Save File - Temporary Name

This action saves the current state of a screen as a temporary file. Temporary files are saved with an ~LS prefix, a unique Windows-generated filename, and a .TMP extension. Temporary files are added to the retrace path, replacing the file that opened them.

If you open a screen with an *Open File - Add to Retrace Path* action, a *Return in Retrace Path* action from the called screen returns to the temporary screen.

Temporary files are stored in either the Windows directory or a directory you specify with the TEMP environment variable in your AUTOEXEC.BAT file. For example, **`set temp=drive:\temp`**.

Temporary files are deleted when you exit from LightShip.

☞ **Important**

Vertical scrolling actions are available for document objects with the Document Vertical Scroll command turned on. Horizontal scrolling actions are available for document objects with the Document Horizontal Scroll command turned on.

The scroll actions scroll all scrollable document objects at the same time, except those with local scroll bars. The *Scroll All Documents to Top* action scrolls all scrollable document objects, including ones with local scroll bars.

Use Options Scroll By Page to scroll page by page instead of line by line.

Scroll All Documents to Top	This action scrolls all document objects to the top, including those with local scroll bars.
Scroll Down	This action scrolls document data down.
Scroll Left	This action scrolls document data to the left.
Scroll Right	This action scrolls document data to the right.
Scroll to Top	This action scrolls document data to the top.
Scroll Up	This action scrolls document data up.

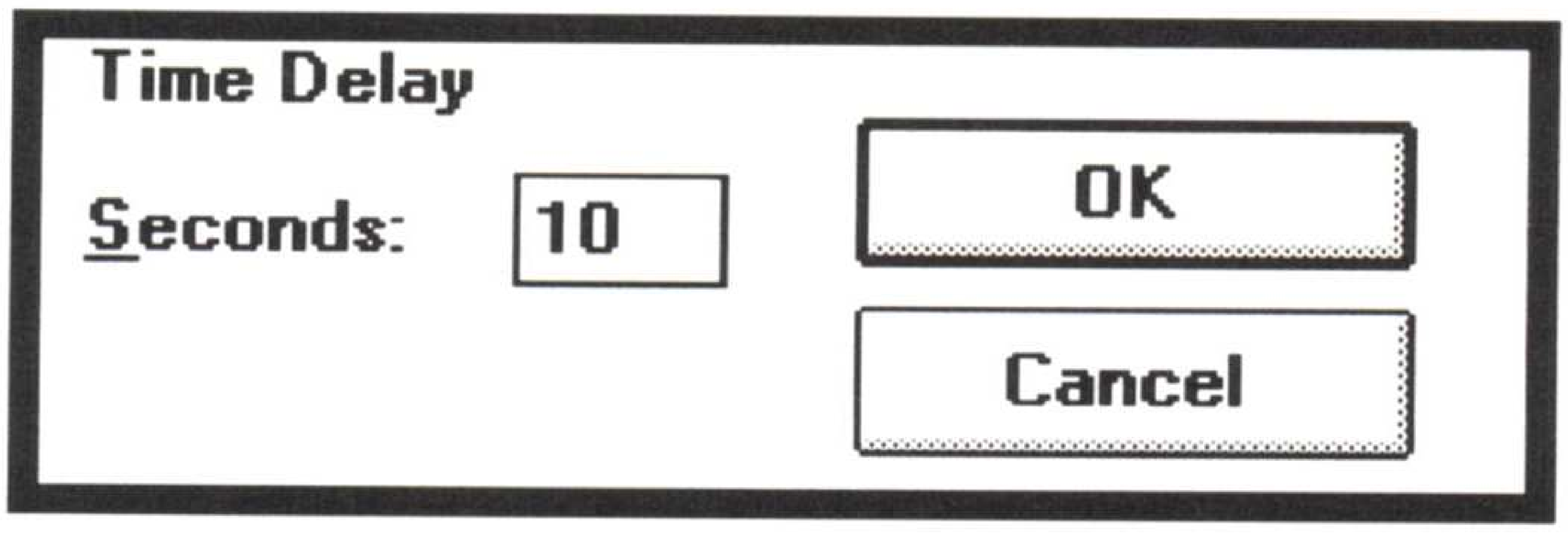
Terminate Program

This action ends the LightShip session. If you are at the Capture level, *Terminate Program* exits you to the DOS prompt.

Time Delay

This action pauses the application for a specified number of seconds.

Use the Time Delay dialog box to enter the number of seconds, between 0 and 999, that you want to delay the application.



Seconds: 10

Figure 10-12 Time Delay Dialog Box

Update Screen

This action updates the painting of the screen. Normally, the screen is not updated until all actions finish executing.

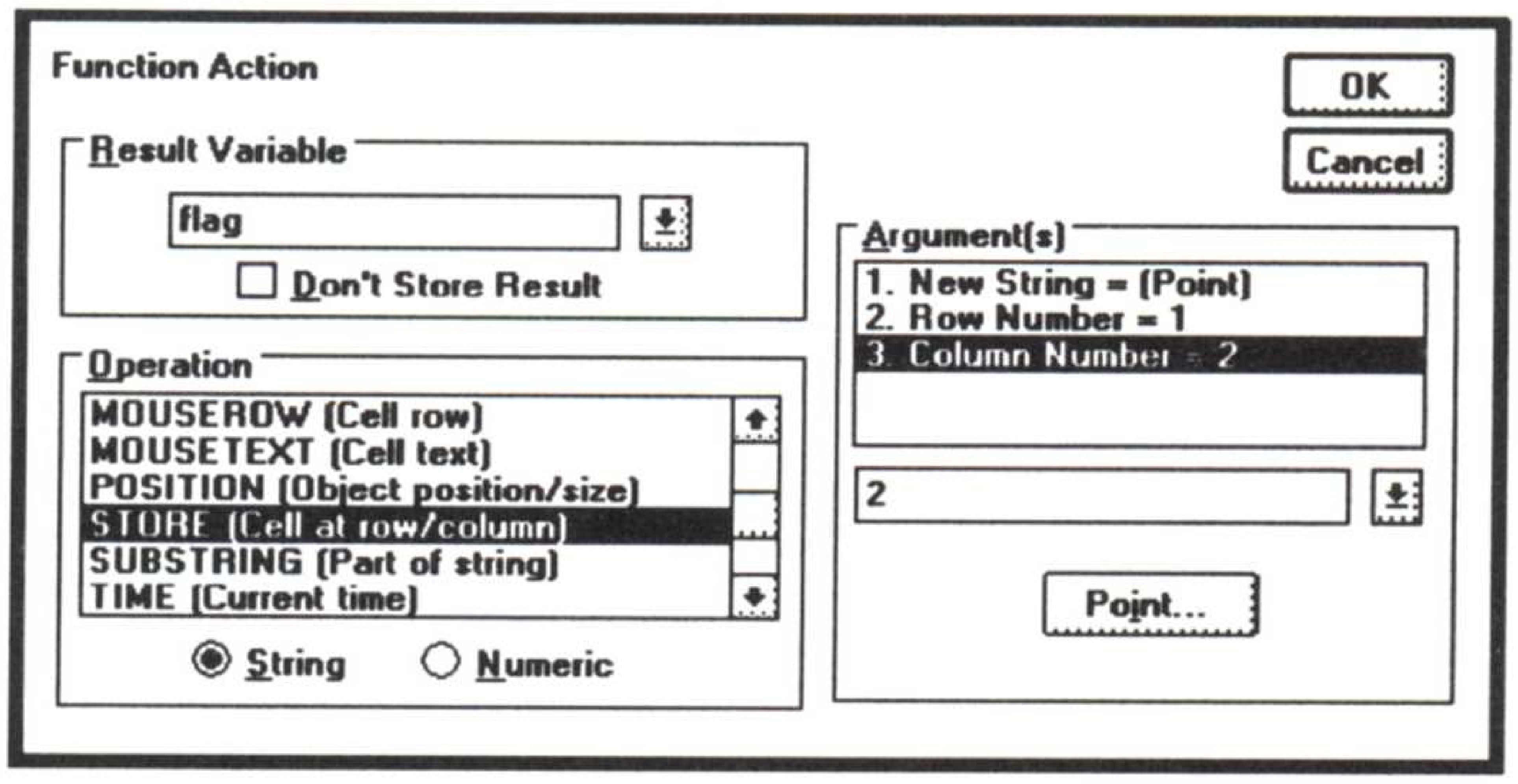
⁂

Chapter 11

Functions

Function Action Dialog Box

The Function Action dialog box opens when you choose *Function* from the Hotspot or Menu Action dialog box. Use the Function Action dialog box to enter numeric and string functions.



Function Action

Result Variable

flag

☐ Don't Store Result

Operation

- MOUSEROW (Cell row)
- MOUSETEXT (Cell text)
- POSITION (Object position/size)
- STORE (Cell at row/column)
- SUBSTRING (Part of string)
- TIME (Current time)

● String ○ Numeric

Argument(s)

1. New String = (Point)
2. Row Number = 1
3. Column Number = 2

2

Figure 11-1 Function Action Dialog Box

Terminology Used

The following terms are used throughout this chapter.

argument	One set of numeric or string input data to a function. An argument can be a variable, (Point) data, or a literal. It can be a single cell or multiple cells in a row and column structure.
Boolean	A logic function that returns true/false results. See True and False.
cell	An individual value from a row and column.
column	Data that is separated by column delimiters. (Document objects that do not use the Document Column Delimiter command have one column.)
condition flag	A function's result that is a scalar true or false. Condition flags must be used before an *If True Begin, If False Begin*, and *Loop Exit If True*. If the condition flag contains multiple values, LightShip uses the last value stored in the result variable.
false	A numeric value of zero or a string value of null.
literal	An argument that you type in the text box. Depending on the type of operation, it can be numeric or a string that is enclosed in quotes. If a string is not in quotes, LightShip assumes that it is a variable and looks for its value; if it has no value, LightShip substitutes a null value.

numeric operations	A function that is performed on numeric data. See also string operation.
(Point)	An argument whose values you point to from a document object.
rows	Data that exists on several lines, delimited by a line feed or a carriage return.
scalar	An argument or result variable that contains one cell value.
string operation	A function performed on alphanumeric data.
true	Not false; the value of non-zero (numeric) or non-null (string) for an argument. A true result variable usually returns the number 1.
variable	A container that stores one or more values.

Result Variable

The Result Variable box specifies a variable to contain the results of the function. Use the Result Variable text box to type a legal variable name. You can also select an existing global or local variable from the drop-down list that appears when you click on the arrow.

Once the result variable contains data, you can use it as a local or global variable, a parameter, or as an argument in another *Function* action. Result variables are listed with other variables in the Special Variables dialog box.

A condition flag is the result of a *Function* action that you interpret as true or false. For numeric operations, the condition flag is true if the result is not zero and false if the result is zero. For string operations, the condition flag is true if the result is not null and false if the result is null.

Condition flags are scalar result variables. If a result variable contains multiple values, LightShip uses the last value in it as the condition flag.

All functions return results into the result variable unless you use the Don't Store Results option.

Don't Store Result

The Don't Store Result option carries out the *Function* action without returning a result. This option removes any variable name currently in the Result Variable text box. Use this option when you do not need to reference the variable's results.

For example, you do not need to store results for the POSITION function or for *Function* actions that exist only for setting the condition flags before conditional actions. LightShip remembers the result for the action that immediately follows it.

For example:

```
a < b
If True Begin...
```

Argument(s)

The Argument(s) box prompts you for the number and type of arguments required to carry out this function. Select an argument from the list so that you can enter input data in the text box below it.

Text box

The text box specifies the data for the argument that is selected in the Argument(s) list box. You can enter any of these argument types into the text box:

- A literal
- A local or global variable that you type in the box or select from the drop-down list
- A range of document object data that you point to

Point...

The Point button assigns document object data to the argument selected in the Argument box. Use the Point mode screen to select one or more values. Data that you point to has an argument name of (Point).

Data can exist in multiple rows and columns if it is affected by the Document Column Delimiter command. Data that is not column delimited is in one column and can be in multiple rows. In this case, any amount of data you select in a row is one cell.

If you point to any blank spaces in a numeric argument, LightShip treats them as zeros and carries out the function. If you point to any blank spaces in a string argument, LightShip treats them as null values.

Numeric

The Numeric option displays a list of numeric functions in the Operation box. Numeric operations interpret the arguments as numbers. Turn this off to display string functions instead.

String

The String option displays string functions in the Operation box. String operations interpret the arguments as character strings. If you are creating a new *Function* action, String is automatically turned on. Turn String off to display numeric functions.

Operation

The Operation box lists the functions that LightShip can carry out. When you select a function from the list, the Argument list box prompts you with the appropriate arguments necessary to perform this function.

Initially, the Operation box lists string functions. You can list numeric functions by turning on the Numeric option.

Numeric Operations

:= (Copy/Test variable)

:= returns the value of an argument.

Example 1: **num := 4**

result **num := 4**

Example 2: **result := obj_position**

obj_position	
100	100
50	50

result	
100	100
50	50

+ (Addition)

+ adds the cells of the second argument to the cells of the first argument.

Example: **result := arg1 + arg2**

arg1	
1	2

arg2	
3	4

result	
4	6

- (Subtraction)

- subtracts the cells of the second argument from the cells of the first argument.

Example: **result := level1 - level2**

level1	
3	4

level2	
1	2

result	
2	2

* (Multiplication)

* multiplies the cells of the second argument by the cells of the first argument.

Example: **result := level1 * level2**

level1		level2		result	
1	2	3	4	3	8

/ (Division)

/ divides the cells of the second argument into the cells of the first argument. Dividing by zero is an illegal operation.

Example: **result := level1 / level2**

level1		level2		result	
1	2	3	4	.33	.5

ABS (Absolute Value)

ABS returns the positive values of an argument's cells.

Example: **result := ABS(range)**

range		result	
2.3	-4.2	2.3	4.2

AND (Both true?)

AND returns a true value if a first argument cell and second argument cell are true. It returns a false value if one or both arguments' cells are false.

Example: **result := AND(value1, value2)**

value1		value2		result	
0	1	2	3	0	1

AVG (Average all numbers)

AVG returns a scalar for the average of an argument's values.

Example: **result := AVG(range)**

range	
2	8

result
5

COUNT (Count all numbers)

COUNT returns a scalar for the total number of non-blank cells in an argument.

Example: **result := COUNT(arg)**

arg	
1	2
	4

result
3

EXP (Exponentiation)

EXP returns values for the first argument's cells to the power of the second argument's cells.

Example: **result := EXP(base,power)**

base	
3	4

power	
2	3

result	
9	64

INT (Integer value)

INT returns the whole number values of an argument's cells.

Example: **result := INT(nums)**

nums	
-1.6	5.66

result	
-1	5

MAX (Highest number)

MAX returns a scalar for an argument's largest cell value.

Example: **result := MAX(nums)**

nums	
1	2
3	-4

result
3

MIN (Lowest number)

MIN returns a scalar for an argument's smallest cell value.

Example: **result := MIN(nums)**

nums	
1	2
3	-4

result
-4

MOD (Modulo)

MOD returns the remainder of the first argument's cells divided by the second argument's cells. The result variable contains a negative cell value when the first argument's cell is negative.

Example: **result := MOD(top, bottom)**

top	
6	9
-7	-2

bottom	
2	7
6	-2

result	
0	2
-1	0

NOT (Inverse true?)

NOT returns the inverse of the cell values in an argument. True values become false and false values become true.

Example: **result := NOT(nums)**

nums	
0	1
2	3

result	
1	0
0	0

OR (Either true?)

OR returns a true value if a first argument cell or second argument cell are true. It also returns a true value if both a first and a second argument cell are true. It returns a false value if both arguments' cells are false.

Example: **result := OR(lev_1,lev_2)**

lev_1	
0	1
2	3

lev_2	
0	2
0	4

result	
0	1
1	1

SUM (Sum all numbers)

SUM returns a scalar value for the sum of an argument's cell values.

Example: **result := SUM(level)**

level	
1	2
3	4

result
10

SUPPRESS (Don't show zeroes)

SUPPRESS displays any zero values in an argument as blanks.

Example: **result := SUPPRESS(level)**

level	
0	1
2	3

result	
	1
2	3

= (Equal?)

= returns a true value if a first argument cell is equal to a second argument cell. It returns a false value if a first argument cell is not equal to a second argument cell.

Example: **result := new=old**

new	
0	1
2	3

old	
0	2
2	2

result	
1	0
1	0

<> (Not equal?)

<> returns a true value if a first argument cell does not equal a second argument cell. It returns a false value if a first argument cell is equal to a second argument cell.

Example: **result := new<>old**

new	
0	1
2	3

old	
0	2
2	2

result	
0	1
0	1

< (Less than?)

< returns a true value if a first argument cell is less than a second argument cell. It returns a false value if a first argument cell is equal to or greater than a second argument cell.

Example: **result := new < old**

new	
0	1
2	3

old	
0	2
2	2

result	
0	1
0	0

<= (Less or equal?)

<= returns a true value if a first argument cell is less than or equal to a second argument cell. If a first argument cell is not less than or equal to a second argument cell, the result is false.

Example: **result := new <= old**

new	
0	1
2	3

old	
0	2
2	2

result	
1	1
1	0

> (Greater than?)

> returns a true value if a first argument cell is greater than a second argument cell. If a first argument cell is equal to or less than the second argument cell, the result is false.

Example: **result := new > old**

new	
0	1
2	3

old	
0	2
2	2

result	
0	0
0	1

>= (Greater or equal?)

>= returns a true value if a first argument cell is greater than or equal to a second argument cell. It returns a false value if a first argument cell is not greater than or equal to a second argument cell.

Example: **result := new >= old**

new	
0	1
2	3

old	
0	2
2	2

result	
1	0
1	1

String Operations

:= (Copy/Test variable

:= returns the value of an argument.

Example: **result := product**

product	
"cola"	"diet"

result	
cola	diet

& (Concatenate strings)

& appends the second argument to the first argument, leaving no space between the joined results.

Example: **result := key & region**

key	
"1="	"2="
"3="	"4="

region	
"north"	"south"
"east"	"west"

result	
1=north	2=south
3=east	4=west

&& (Concatenate with space)

&& appends the second argument to the first argument, leaving a single space between the joined results.

Example: **result := key && region**

key	
"1="	"2="
"3="	"4="

region	
"north"	"south"
"east"	"west"

result	
1= north	2= south
3= east	4= west

CONTAINS (String within string)

CONTAINS returns the starting index position of a string's occurrence in each cell of an argument. It returns a zero if a cell does not contain the value.

The first argument is the range of data to scan. The second argument is the scalar value to be tracked.

Example: **result := CONTAINS(range, key)**

range	
"NORTH"	"WEST"
"NW"	"NNW"

key
"W"

result	
0	1
2	3

DATE (Current date)

DATE returns a scalar value for the current date determined by the DOS system setup.

Example: **today := DATE**
result **today := 09/10/91**

EXISTS (File exists?)

EXISTS returns true values if the specified files exist. It returns a false value if the specified file does not exist. It checks the search path if you type a filename without a pathname in the text box.

The results can be:

0	The file does not exist
1	The file exists but does not have read and write privileges
2	The file exists and has read privileges only
3	The file exists and has write privileges only
4	The file exists and has read and write privileges

Example: **result := EXISTS(files)**

files	
"chart.lsf"	"chart.xls"

result	
4	0

EXISTSAPP (Application executing?)

EXISTSAPP returns true values if the specified Windows .EXE applications are activated behind LightShip. It returns false values if the applications are not activated.

Example: **result := EXISTSAPP(active_apps)**

active_apps	
"qe.exe"	"clock.exe"

result	
1	0

FETCH (Cell by row/column)

FETCH returns the scalar cell value that exists in a specified row and column in an argument. The first argument is the range of data to search. The second argument is the row from which to fetch the value. The third argument is the column from which to fetch the value.

Example: **result := FETCH(job_level, 2, 2)**

job_level	
"Office 1"	"Smith"
"Office 2"	"Jones"

result
Jones

LEN (String character length)

LEN counts the number of character positions in each cell in an argument.

Example: **result := LEN(ad_reviews)**

ad_reviews	
"Review I"	"***"
"Review II"	"*"
"Review III"	"**"

result	
8	3
9	1
10	2

LOOKUP (String matches cell)

LOOKUP returns the index position of a specified cell value in an argument. LOOKUP determines a cell's index position by counting from left to right in columns, and then row by row.

The first argument is the range of data to search. The second argument is the cell string whose cell index position you want to look up.

Example: result := LOOKUP(ad_reviews, "*")**

ad_reviews	
"Review I"	"***"
"Review II"	"*"
"Review III"	"**"

result
2

☞ Important

For the following MOUSE functions, the hotspot must lie directly in front of the document object that it points to. It must be the exact same size as the document object or be one pixel smaller.

MOUSECOLUMN (Cell column)

MOUSECOLUMN returns the scalar index position of the column on which you click. For example, if you click anywhere in the column of A's, LightShip returns a 1. If you click anywhere in the column of B's, LightShip returns a 2.

MOUSEROW					
1	A	B	C	D	
2	A	B	C	D	
3	A	B	C	D	
	1	2	3	4	MOUSECOLUMN

MOUSEROW (Cell row)

MOUSEROW returns the scalar index position of the row on which you click.

In the previous example, if you click anywhere in the first row of A B C D values, LightShip returns a 1. If you click anywhere in the second row, LightShip returns a 2.

MOUSETEXT (Cell text)

MOUSETEXT returns the scalar cell value on which you click.

In the previous example, if you click on the last letter in the first row, the result is D.

POSITION (Object position/size)

POSITION returns an object's original X and Y cursor position, width, and height, and can also:

- Move the object to a new position
- Resize it
- Hide it

The View Status Box command shows the selected object's position and size. The Special Debug Objects List command shows all objects' positions and sizes.

The first argument identifies the object to be repositioned. It is up to four numbers separated by commas that represent the current top-left corner and size of the object. The numbers must be enclosed in quotes. LightShip knows the object's width and height when you provide its position, so the width and height specifications are optional.

Type the numbers in this order:

1. x position
2. y position
3. width (optional)
4. height (optional)

If there are multiple objects with the same position and size, LightShip uses the topmost object.

The second argument is four numbers that represent the object's top-left corner destination and size. Type the four numbers in the same way as described for the first argument; the width and height are not optional unless you want to retain the same size.

Example:

```
                         Object Source
                        X    Y   Wth  Ht
                        |    |    |   |
result := POSITION ("200, 200, 50, 50" "100, 100, 25, 25")
                                         |    |    |    |
                                         X    Y   Wth   Ht
                                         Object Destination
```

result: The object moves from 200, 200 to 100, 100 and its size decreases from 50, 50 to 25, 25.

A blank width and height in one or both arguments changes an object's position but not its size.

Example:

result := POSITION ("200,200" "600,200")

result: The object moves from 200, 200 to 600, 200. Its size remains the same.

A zero width and height hides an object.

Example:

result := POSITION ("200,200,50,50" "200,200,0,0")

result: This object remains in the same position. Its size changes from 50, 50 to 0, 0, which makes it hidden. Hidden objects do not hide until you go to the Browse level. When you come back to the Author level, it remains hidden.

Hidden objects are not affected by any View Outline or Show Hidden commands because they have no width and height. To show hidden objects, add another POSITION function in which the destination size has a visible width and height.

A single character for the second argument does nothing other than return the object's current X, Y, width, and height values. (You do not have to type the first argument's size.)

Example:

result := POSITION ("200,200" " ")

result: The result variable resolves to 200, 200, 50, 50, which is the current position and size of the object.

☞ **Important** If the first argument contains an incorrect position or size, LightShip ignores this *Function* action.

If you are resizing an image object, turn on the Image Fit Image to Object command so that LightShip can resize the image properly.

You must move objects within the boundaries of the screen; otherwise, the object disappears.

STORE (Cell at row/column)

STORE stores a scalar cell value in the specified row and column in the result variable. The first argument identifies the value to store. The second argument is the row number in which to store the value. The third argument is the column number in which to store the value.

Example: **result := STORE(value, 2, 2)**

value
"***"

result	
	***

SUBSTRING (Part of string)

SUBSTRING returns a substring of an argument. The first argument is the range of data to operate on; the second argument is the character position to begin the substring; the third argument is the string length that you want to return.

Example 1: **time := 16:30:23**
hour := SUBSTRING (time,1,2)
hour := 16

Example 2: **result := SUBSTRING(review, 8, 7)**

review
"Review I ***"
"Review II *"
"Review III **"

result
I ***
II *
III **

TIME (Current time)

TIME returns a scalar value for the current time, determined by the DOS system setup.

Example: **result := TIME**
result := 04:30:23

TRIM (Remove spaces)

TRIM removes spaces from an argument's beginning and end.

Example: **result := TRIM(range)**

range
"   ***"
" *"
" **"

result
***
*
**

String Comparisons

LightShip uses the ANSI collating sequence to compare string values. Strings are ordered by this hierarchy:

- Spaces, symbols and special characters
- Numbers
- Uppercase letters
- Lowercase letters

As a result, one cell is less than the other if its first character is closer to the beginning of the collating sequence. For the exact ANSI collating order, refer to the *Microsoft Windows User's Guide*. These Boolean functions are all true:

```
"  " < "0"
"Product 1" < "Product 2"
"Product" < "product"
"% Total" < "Total"
"Massachusetts" < "Ohio"
"east coast" < "west coast"
```

One cell string equals another if they are identical strings and cases. The == function is the exception to this rule, where strings can be identical without regard to case.

= (Equal?)

= returns a true value if a first argument cell equals a second argument cell. It returns a false value if the cells are not equal.

Example: **result := new_list=old_list**

new_list	
"Prod. A"	"Prod. B"
"cogs"	"widgets"

old_list	
"Prod. C"	"Prod. D"
"cogs"	"widgets"

result	
0	0
1	1

== (Equal ignoring case?)

== returns a true value if a first argument cell equals a second argument cell, regardless of upper or lowercase letters. If not equal, the result is false.

Example: **result := new_list==old_list**

new_list	
"Prod. A"	"Prod. B"
"cogs"	"widgets"

old_list	
"Prod. C"	"Prod. D"
"Cogs"	"Widgets"

result	
0	0
1	1

<> (Not equal?)

<> returns a true value if a first argument cell does not equal a second argument cell. It returns a false value if the argument cells are equal.

Example: **result := new_list<>old_list**

new_list	
"Prod. A"	"Prod. B"
"cogs"	"widgets"

old_list	
"Prod. C"	"Prod. D"
"Cogs"	"Wheels"

result	
1	1
1	1

< (Less than?)

< returns a true value if a first argument cell is less than a second argument cell. It returns a false value if a first argument cell is greater than or equal to a second argument cell.

Example: **result := new_list < old_list**

new_list	
"Prod. A"	"Prod. B"
"widgets"	"wheels"

old_list	
"Prod. C"	"Prod. D"
"cogs"	"widgets"

result	
1	1
0	1

<= (Less or equal?)

<= returns a true value if a first argument cell is less than or equal to a second argument cell. It returns a false value if a first argument cell is greater than a second argument cell.

Example: **result := new_list <= old_list**

new_list	
"Prod. A"	"Prod. B"
"widgets"	"wheels"

old_list	
"Prod. C"	"Prod. D"
"cogs"	"wheels"

result	
1	1
0	1

> (Greater than?)

> returns a true value if a first argument cell is greater than a second argument cell. It returns a false value if a first argument cell is less than or equal to a second argument cell.

Example: **result := new_list > old_list**

new_list	
"Prod. A"	"Prod. B"
"widgets"	"wheels"

old_list	
"Prod. C"	"Prod. D"
"cogs"	"wheels"

result	
0	0
1	0

>= (Greater or equal?)

>= returns a true value if a first argument cell is greater than or equal to a second argument cell. It returns a false value if a first argument cell is less than a second argument cell.

Example: **result := new_list >= old_list**

new_list	
"Prod. A"	"Prod. B"
"widgets"	"wheels"

old_list	
"Prod. C"	"Prod. D"
"cogs"	"wheels"

result	
0	0
1	1

◆◆◆

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